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HISTORY OF PROJECT CHIVE

A. Before Phase I

The rationale for the CHIVE Project had its roots in numerous

investigations, conducted by in-house as well as contractor personnel

since approximately 1959, all of which generally agreed both as to the

increasing seriousness of the information retrieval problem within

the Agency and the advisability of introducing new hardware and

techniques reflecting the present state-of-the-art of the information-

handling technology. In a report issued in 1958 under the auspices of

the Central Reference Advisory Group (CRAG), it was stated that in

one DD/I Office (OCR):

> "The volume of incoming information exceeds processing
> capabilities based on current manual or electrical accounting
> machine (EAM) techniques;
>
> The proportion of receipts which can be fully processed is
> declining;
>
> Service from existing facilities is becoming slower as the
> size of the several indexes increases;
>
> Quality of service in terms of listing, subject correlation,
> up-dating, and display is declining or not offered because
> of the limitations of current staff and equipment."

These findings with respect to OCR were complemented by indicated

applications for computers in ORR, OSI, and other DD/I Offices.

The CHIVE Project to date, therefore, was not envisioned

as a study of the applicability of computers and other devices to

the document handling problems of the Agency, but rather as a

system-oriented attempt to reduce the spectrum of DD/I problems

to manageable proportions in order to exact from available equip-

ment and techniques their known design potential in the solution of

these critical problems. Because the magnitude and complexity

of the task equaled or exceeded any previous design effort in the

storage and retrieval area, the search for problem solutions was

characterized by an attitude of relative caution.

The major events [1] preceding the initiation of Phase I of the

CHIVE project are as follows:

1. Feb 1959

CIA Management Staff recommended
to the DCI that a study be undertaken
of the computer requirements of the
DD/I area.

2. Jul - Aug 1959

DD/I components conducted a pre-
feasibility study, concluding that
there are areas demanding improve-
ment for which ADP offers significant
potential support, and recommending
"that an EDPM feasibility study for the
DD/I area be undertaken."

3. Jan - Mar 1961

IBM and SDC, under the sponsorship
of the DD/I Automation Staff, conducted
6-week surveys of the DD/I, finding that
the DD/I was seriously behind other
Community members in the information
handling art and recommending that a large-
scale effort be launched immediately with
heavy contractor participation.

[1] See: Project CHIVE Preliminary System Design Report, Information Processing,
1 Dec 1963, CHIVE 1-63, pp 6,7.

4. April 1961   The DD/I Automation Staff issued a paper recommending that the DD/I establish a Computer Center, implement production applications on the computer in specific problem areas, and undertake a major system study of the overall document and information retrieval problem.

5. July 1961   The CIA Automatic Data Processing Staff (ADPS) was created in the DD/S and the DD/I Automation and CIA Management Staffs abolished.
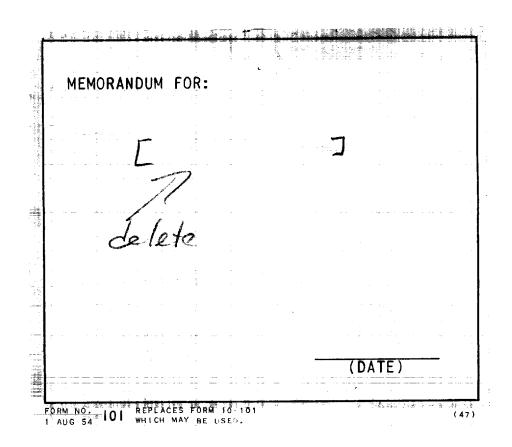
6. October 1961   Formal management review was completed and approval received for an EDP development program for the DD/I based upon the Automation Staff's proposals of April 1961.

7. January 1962   ADPS published a document describing its planned development program for the DD/I in greater detail. The principal phases of the system design effort in the document and information retrieval field (Task III of the proposed program) were anticipated to include: (a) contractor orientation, (b) planning the study, (c) fact-finding, (d) system design, (e) testing of techniques and models, (f) implementation of selected sub-systems, and (g) documentation.

It should be emphasized here that the name CHIVE was originally applied to a three-part program aimed at moving the Intelligence Directorate into the computer environment.

(1) The first element of the program was to establish a computer center as such, and to acquire the personnel, hardware, and expertise necessary to operate this center.

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(DATE)

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(2) The second element was to implement specific ADP

applications which had been identified by study groups over a

period of a year or so. (Note: The intent of these first two

elements was to get started on specific, well-defined appli-

cations as soon as ADP support was available.)

(3) The third element was to examine the general infor-

mation/document retrieval problem in the Agency.

The goal of this third element was later altered to address the

information/document retrieval problems of the DD/I and particularly

the Office of Central Reference (now known as the Central Reference

Service) Thus modified, the third element of the three-part program

became Project CHIVE.

It was apparent to CHIVE architects that though the Agency

had senior and capable people who were intimately aware of the

capabilities and shortcomings of its present information storage and

retrieval system, it was woefully poor in ADP talent—both system

analysts and programmers. This was evidenced by the willingness

of the Agency to ask contractors such as IBM and SDC, acknowledged

as proficient in system design and development, to study the Agency's

problem.

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The decision to acquire IBM's services was rooted to a

certain extent in their pre-eminence in the field of hardware

service. It was felt also that the contractor personnel assigned

to CHIVE should understand IBM hardware. Finally, IBM's

establishment of semi-autonomous divisions such as Federal

Systems Division, separated the hardware salesman from the

application system specialists and in theory provided the latter

with a certain objectivity.

(A) which performed a service of common
concern to the entire Agency and, in many
respects, to the entire intelligence community

B. Phase I

The first phase of a multi-phase system development was a requirements determination phase and fact-finding survey. Approximately 150 interviews of user offices--primarily research or production offices--in CIA were conducted during this period. These were aimed at determining what information problems existed, how the user regarded the present central reference system, what source material were of primary concern, and in general what requirements would be levied on system developers. One of the principal issues was the existence of a central reference facility. Alternative methods of providing analyst support existed and had points in their favor. Separate and distinct special project files was one alternative. Another was to provide assistance to the research and production analysts in maintaining their own personal collections--the so-called "shoebox files".

The analysts conducting and evaluating the interviews had to be as objective as possible since the identification of which kind of system users preferred was a major influence in establishing requirements. It turned out that the majority preferred the central reference facility, as an adjunct to the other alternatives. With this basic concept determined, more detailed requirements could be set forth.

The major events of Phase I were: [2]

May - Jul 1962   Clearance and orientation of contractor personnel, as well as recruitment and preliminary training of initial "hard core" element of ADP Staff, was completed.

[2] ibid pp 7,8

Aug 1962	The scope and methodology of the fact-finding effort was developed and management approval obtained for a detailed survey of all DD/I offices.
Sep *A62* - April 1963	Joint ADPS/IBM teams interviewed approximately 150 component organizations of the DD/I.
Oct 1962 *3/*	A memo from Ray Cline (DD/I) to Intelligence Assistant Directors reviewed the three CHIVE task areas and endorsed the project efforts.
Jun 1963	Major findings and recommended design parameters resulting from the Phase I DD/I system study were presented to selected DD/I managers in oral and written form.
Aug 1963	The DD/I formed a CHIVE Evaluation Group *(CEG)* composed of representatives from various Agency offices, to review the CHIVE Phase I report.
Aug 1963	The Automatic Data Processing Staff was transferred from the DD/S to the newly established DD/S&T and reorganized as the Office of Computer Services.
Sep - Oct 1963	The CHIVE Evaluation Group completed its analysis of the CHIVE Phase I findings, recommending (inter alia) that the Project continue into a second phase with guidance and support from the DD/I and careful testing of system feasibility prior to implementation.

The *system design on Phase I* report entitled, Project CHIVE--Preliminary System Design Report--Information Processing, 1 Dec 1963, *(see footnote 1)* produced after Phase I ended, was devoted for the most part to a discussion of System Objectives and System Functions Preliminary Specifications.

3/ *This events does not appear in document referenced - footnote 1*

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The two principal system characteristics were:

    (1) Document-based

    (2) Centralized control

The first of these had been denied as a necessary attribute by some staff employees with considerable experience in the Agency but who were ambitious to push forward to a system of data control, data manipulation, and data or information retrieval. In effect, the proponents of this concept suggested that once the data and information content of a document had been identified, extracted, indexed, coded, and stored in an EDP system, the document was of only marginal importance. Reliance would be placed on the EDP system to retrieve, by subject, category, named object, and so on, the gist of the documents indexed.

Those who supported the need to build into the system a capability for document as well as fact retrieval were simply responding to the evidence supplied by a central reference service. This experience showed that analysts very often wished to read the parent document from which data had been extracted. That was viewed as a requirement which would continue for some time to come. Hence the system would be document-based.

Discussion of the second one characteristic addressed the multiplicity of repositories which constituted [characterized] the present system and went on to propose that "...the specialized register concept be abandoned and the personnel of the central system be organized along geographic lines to the extent possible." Clearly, reorganization of OCR was basic and fundamental to the CHIVE design.

the discussion of

Under System Service in the same report the CHIVE designers

listed the following as basic to the design: "(1) that the CHIVE

system and the analyst files will complement one another, and

(2) that the system's primary customer is the Agency desk

analyst." Thus, the *continuation* continuance of the "shoe-box file" was

acknowledged together with an emphasis on user, not operator,

satisfaction.

The chapter on System Scope in the Phase I report had five

sections which pretty well established system boundaries. Listed

below are the section headings with short excerpts from each:

"1. Document Boundaries

...The data base for the CHIVE System must, therefore,
encompass all documents in use by the analytic offices
which the system must serve.

2. Indexing Boundaries

...In addition to retrieving material based on multiple
criteria, (i.e., personalities, organizations/installations,
geographic location, subject) a capability for large-scale
manipulation of the data base index must be provided to
permit information to be correlated for the analyst. This,
indeed, is one of the primary justifications for acquiring
a computer which, unlike simpler machine tools, has both
the speed and logic capabilities to perform this function
effectively.

3. Security Boundaries

If the proposed system is to serve in fact as the central
repository of positive intelligence information for all
components of the Agency, it must process and store any
information of continuing intelligence value--whatever its
security classification.

4. Dissemination

The Agency must have the capability to disseminate incoming
documents automatically on the basis of the document content

and analyst's statements of interests.

5. The Initial System

The basic objective of the initial system is to establish
a small-scale mechanical structure of the eventual system in a
limited, controlled environment. This system will be designed
with the performance specifications of the full system in
mind for application to a limited area. One of the basic
premises of the initial system, however, will be that
expansion in terms of added sources and increased performance
will not require substantial redesign of programs, methods
of operation or equipment configuration."

Clearly, these concepts were controversial to many. Note

in 2. the reference to the justification for a computer. In 3.

there was embodied the "all-source file" concept. In 4. automatic

dissemination was advocated (later abandoned in the design of a

first system). In 5.·the bread-board approach·was recommended.

Coupled with the proposed area reorganization this indicate d that

the initial system would be tested in one geographic area component.

As the culmination of the Phase I data gathering and conceptual

design effort, this document is noteworthy.

The year 1963 was filled with accomplishments and changes

for CHIVE. Two computers (1401/1410) for the DD/I were delivered

in January 1963 and in subsequent monthly reports were referred to

as the CHIVE Computer System. CHIVE programmers (trainees) worked

under the tutelage of IBM personnel. Computer support prior to

the installations of the 1401/1410 Systems was provided by DDP.

It is noteworthy that during the first half of 1963, Project CHIVE

had the three-pronged emphasis noted earlier. In fact, a seven-

page report written for the DD/I at the end of FY-63 devoted six

pages to accomplishments in: establishing a computer center and
implementing applications. The seventh page announced the end
of Phase I of the Document/Information Retrieval Systems Design—
Task III - and commented that this task was the most difficult of
all CHIVE tasks.

The CHIVE Evaluation Group, was also constituted in July/
August, and the August status report indicated that further progress
on Task III - System Design had virtually stopped. In September
those CHIVE personnel assigned to Task III were busy preparing
briefings and reports for the CEG.

The CEG report of 7 October 1963 recommended the continuation
of project CHIVE--but not without reservations. The group recom-
mended that management responsibility for CHIVE should be vested
in the Intelligence Directorate, and that OCR should continue to
improve its present system. The subject of hardware received
attention as well. [Clearly the CEG was not concerned] that program
testing be done in a centralized facility such as OCS, but when
computer utilization reached one shift or more, the computer system
should be part of the central reference system of the Intelligence
Directorate. Moreover, CHIVE was charged to consider suitability,
for the Intelligence Directorate, of extant systems when assessing
equipment requirements.

Another area of concern to the CEG was that of testing. The
group seemed to be expressing misgivings about OCR plunging into
a new system without testing of pilot projects. Recommendations
were made to the effect that formulation of such pilot projects

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be approved by the DD/I. (As the indexing experiment of
Phase II showed, such activities are expensive, time consuming,
and in the final analysis, suggest, but do not prove, an operational
approach).

C. Phase II

Management review by the CHIVE Evaluation Group [   ] and

[   ]

[   ] of the Phase I report, the reorganization which

resulted in OCS, and the physical relocation of people and equipment

were major factors in causing Phase II to have a slow start. A progress

report of approximately 28 pages written 18 September 1963 was a

distillation of design concepts garnered in Phase I and polished in

the first months of Phase II.

CHIVE 1-63, 1 Dec 1963, presented the same schedule shown in

the June 1963 Project CHIVE Quarterly Report. This schedule called

for the completion of Phase I (of Task III) in June 1963. The same

schedule shows Phase II as running from July 1963 through June 1964

(actually the Phase II report was not completed until the Spring of

1965). Phase III in the old schedule was to run from July 1964 through

April 1965--in retrospect, an incredibly optimistic plan. In fact,

Phase II was completed at about the same time that Phase III had been

planned to end.

The establishment of OCS and the designation of Task III as

Project CHIVE resulted in a much smaller team. (It should be noted

that Project CHIVE went from about 60 people to six and from three

tasks to one without a name change).

This new team was composed of analysts from several components. Like

many most projects, CHIVE was an organizational anomaly. IBM, OCR, and OCS

contributed manpower to the effort. This was advantageous in that it

brought together the right mix of disciplines and experience. However,

management guidance and control also came from various sources. This

The OCS contingent was the fledgling Development Branch (later Division); the OCR contingent, designated the CHIVE Support Staff, consisted of senior analysts who for the most part had acquired their STATINTL experience in the Library (Documents Division), [   ] and Special Register. The IBM group -- the largest of the three -- consisted of analysts and programmers.

In October 1963, project personnel had been assigned to major design areas. IBM had sole responsibility for all facets of design with the exception of Information Processing -- indexing procedures, indexing language, definition of files, document processing, file conversion, selection criteria and so on. These topics were addressed by a group of agency employees. It was recognized rather early that this was the bellwether of the design areas--decisions made here would have a marked influence on all other areas. STATINTL

IBM had submitted a contract proposal in June of 1963. Discussions between agency designers led by [   ] and the IBM contingent on how to get the job done continued for some time. Clearly IBM felt that they could not proceed to work intelligently on their assigned design tasks without input from the Information Processing team. Since they felt they possessed some pertinent experience they wished to be represented on that team as well. The staff personnel were loath to surrender, even partially, design tasks in the one area they understood thoroughly and where they felt their contribution would be more valuable than any work done by an outsider. Sharing the burden was not particularly palatable to IBM since they preferred to work

on well-defined tasks which were their exclusive responsibility. Also, they had a different design concept from that set forth by the in-house people. This was to be expected but was not precisely welcome.

Compromises were discussed which would permit IBM personnel to maintain headway in their exclusive task areas but would also let them assign personnel to the information Processing Task. To the extent possible, this had to be reflected in the contract. The proper wording was not easy to find. As a consequence the IBM contract was not signed until June 1964--one year after IBM had written their proposal.

The August 1964 monthly report shows assignment of personnel to major design areas. Of these, IBM had sole responsibility for EDP System Design and Programming Support. Two contractor employees were responsible for the Document Delivery System. *Design of the Information Processing area and overall design responsibility was assigned to other personnel.* Thus contract personnel did design work without |system| design responsibility, *for design of the total system.* This continued to be an awkward situation from their point of view and it resulted in a fairly rapid turnover in IBM on-site managers during Phase II.

A list of major events during Phase II is as follows:

1. Sept 1963   First progress report of Phase II produced.

2. Dec 1963   CHIVE 1-63 which was to be the design "bible"
                         for the project was produced.

3. April 1964   [   ] appointed as DD/I CHIVE Project
                         Officer. CHIVE Evaluation Conference held at
                         [   ] resulted in substantial change to organization
                         of system design efforts as well as decisions
                         in design areas where alternatives had previously
                         existed.

4. May/June 1964   First indexing experiment utilizing computer
                         programs, conducted by CHIVE personnel.

5. June 1964 - June 65 During this period a large scale indexing
                         experiment utilizing computer programs for

storage and retrieval of index records was planned, designed, staffed, conducted, and analyzed.

6. August 1964

A functional flow diagram was produced showing input/outputs and identifying program elements to be written in support of the OCR/CHIVE Indexing Experiment.

7. September 1964

A technical report entitled "A Comparative Analysis of Document Delivery Systems for Large and Active Files" was distributed, thus signalling the completion of the major design effort in this area.

8. November 1964

During the third week, indexing began on the OCR/CHIVE Indexing Experiment. The team, consisting of 26 people, had indexed 1500 documents by the end of the month.

9. December 1964

The major components of the computer program, system necessary to support the Indexing Experiment were operational and the building of tape files containing index data was begun.

10. January 1965

Indexing of the 5,130 doouments for the Indexing Experiment was completed and the majority of the indexers returned to their home components in OCR. Approximately nine members of the team were retained to assist in the query phase of the experiment.

11. March 1965

A preliminary study of input transcription techniques submitted by SRI for the Phase II report recommended the use of a page reader. A study of available optical character recognition systems was begun. A revision of the Intelligence Subject Code (ISC) was begun as a result of the indexing experiment. This was a Phase III task started during Phase II.

12. April 1965

The Systems Analysis Staff was formed in OCR and the CHIVE Support Staff was abolished.

13. May 1965

By the end of May, three of the seven volumes of the CHIVE Phase II report had been printed and distributed. A project was initiated to produce a China Locations Dictionary by merging extant dictionaries. This was another task/area intended for Phase III.

14. June 1965

The query phase of the OCR/CHIVE Indexing
Experiment was completed, signalling the end
of the experiment and associated analysis.
Another Phase III task was initiated. This one
was concerned with the feasibility of converting
large OCR files for CHIVE use in the operational
phase.

15. July 1965

All seven volumes of the Phase II report were STATINTL
disseminated. The CHIVE Project was reorganized
as the CHIVE Task Force with [   ] of
OCS as its director, reporting to the director of
OCR. Management approval of the Phase II report
and direction to proceed with Phase III had not
been received at this time. The design effort,
which culminated during Phase III in production
of the SKAN (Subject Keyword Announcement)
publication, began this month.

16. August 1965

By the end of this month, most of the tasks
planned for Phase III had been initiated and
plans to recruit the personnel necessary for
full staffing of the task force had been formulated.

17. September 1965

A memo to D/OCS/DDS&T from the DD/I dated
16 September 1965 stated that with certain
exceptions the Phase II report and recommendations
had been approved, and that the D/OCR had been
directed to divert resources to staff the CHIVE
Task Force. Thus Phase III began.

This list of events is only an effort to capture highlights and is
indicative of the problems and satisfactions of system design work.

One of the major design areas that was not highlighted in this
list was the EDP System. A great deal of work was done by IBM contractors
in this area. They studied core allocation problems, interface with S/360
Operating System problems, file definition problems, and so on. Many
reports and recommendations were produced. Volume VII of the Phase II

report which covered the EDP System design was 389 pages long--

exceeded only by Volume V, 526 pages. Unfortunately the detail of the

design was based on other areas about which information was incomplete

and/or constantly changing. For example, IBM's S/360 hardware/soft-

ware dilemmas had not become public knowledge at that time. Equally

important, detailed requirements were not obtainable from the customer,

the DD/I analysts, nor from the operator, OCR, whose personnel had in-

complete understanding of what was required in order that computer pro-

grams could be specified and written. Thus the task of specifying require-

ments fell to the system designer/developer--a very risky business.

The result of this approach was that an EDP system was designed

which was generalized along almost any dimension that one could choose--

with at least one notable exception, the hardware system. The designers

were assured that the EDP program system would be run on a large scale system,

i.e., an IBM 360/50 or larger since it was OCS's intention to go to that

line of equipment, and the Phase II recommendations called for the EDP program

system to run initially on OCS hardware with a review of the OCS com-

puter load after two years to determine who should manage the computer

element of CHIVE. However, Mr. Kline's (DD/I) memo of 18 September

did not accept that recommendation and repeated the theme expressed in

the CHIVE Evaluation Group report, i.e., the Intelligence Directorate

should have its own computer. |By omission| it was agreed that testing

would be done on OCS equipment so the program development could pro-

ceed.)(As Phase III events will show, OCS's hardware was rejected and

the CHIVE program system was circumvented.)

Very general information storage and retrieval systems are very complex and very difficult to build. However, the designers felt that the demands of fact/information retrieval/manipulation in an intelligence agency were sufficiently demanding to justify a very powerful system.

Another point of interest in Phase II was simply the historical problem of deciding when Phase II ended and Phase III began. The OCS/CHIVE Indexing Experiment spawned Phase III tasks while it was in progress. As soon as the indexing was completed and the indexer's critiques had been produced and absorbed, senior analysts on the Experiment team were anxious to translate findings into indexing tools and procedures. So the modification of the (ISC) *Intelligence Subject Code* was begun. Also, analysis and testing of the indexing position was initiated to determine what indexing aids were appropriate. It should be remembered that a basic CHIVE concept called for a division of labor between analyst and indexer; many OCR analysts did both. Thus the indexing position and its relation to the analyst was fair game for analysis, study, and test.

A factor, which contributed to the initiation of Phase III tasks while experiment queries were still being tidied up, was geography. The indexing experiment had been conducted in a different part of the building than that occupied by the CHIVE Project. When the indexing was finished, the cadre of senior analysts involved in the experiment stayed in that area to analyze queries and discuss results. These people (all OCR personnel) were documentalists, index method experts, and librarians. It was very natural for them to apply experimental results. So Phase III had a running

start before the DD/I memo was written in September. The staff person-
nel necessary for some tasks were not available, however, and could not
be obtained before management approval to proceed with Phase III.

Another aspect of the Indexing Experiment that warrants attention
was the programming support required. The IBM programmers took advan-
tage of the Formatted File System(developed by IBM for Fleet Intelligence
Center Europe)which could be run on the IBM 1410 in OCS/ and However, a
query program, AD003, previously written by OCS programmers, was used
to provide the necessary additional query capability. In addition, programs
had to be written specifically for the Experiment to provide input processing
and listing functions. This collection of programs provided the operational
capability necessary to process index records and provide responses to
queries, including KWIC (Keyword In Context) listings.

Over and above this system were the statistical routines which were
produced by the programmers to assist the analysts in their interpretation
of the experimental data. These routines provided statistics on header data,
content data, document categories, and codes used by the indexers. It
should be noted that either in a test or an operational situation, statistical
analysis is a powerful tool in analyzing system strengths and weaknesses.

Finally there were computer programs were necessary to provide diction-
aries and authority lists. The indexers required such listings to do their
job. In addition, the people (analysts)answering queries needed such lists
in order to obtain some idea of what kinds of data were held in the file.
It was this last area of computer programming that stimulated the dictionary
building efforts over the next two years.

The design concepts postulated in the Phase I report and given a

firmer emphasis in CHIVE 1-63, went through considerable examination

and testing during Phase II. It is interesting to note that there was no sub-

stantial shift of design emphasis as a result of this exercise. One area

which received only cursory attention before it was exempted from

further analysis was the dissemination area. Two very good reasons existed

for excluding it from the initial CHIVE system. First, the dissemination

process had a good reputation with its customers and since it was readily

isolatable from the main system, it seemed pointless to disturb it. Second,

the contract work being performed for the Air Force at the Foreign Tech-

nology Division had as its first application the automation of dissemination.

It was reasonable, therefore, to wait for the fruits of this labor.

Although the formidability of the security problems associated with

an all-source EDP file were better understood by the end of Phase II, the

project personnel viewed them as primarily technical in nature and capable

of solution.

Study of the selection area during Phase II had started to address the

nuts and bolts of the problem with no drastic shift from the document types

identified earlier. Clearly, the amount of material to be captured was a

direct function of manpower available. The results of the indexing experi-

ment gave added importance to the role of subject indexing without reducing

the value of indexing named objects.

The political and inertial problems associated with a reorganization of OCR along geographic lines were recognized but postponed to a certain extent. The initial component, China Operations Group (COG) COG, would operate in a test mode for some period of time before seizing production responsibility from those several components in OCR which handled China-related queries and reports.

The concept of a team of information analyst and indexer(s) had been tested to a degree during the indexing experiment but it was clear that the concept had to be tested in an operational environment before a decision could be made regarding its validity.

Such design concepts as single point service, improved document delivery system, and direct input of preformatted index data were still viable at the end of Phase II. The conceptual design of the computer program system received little criticism and it was apparent that OCR, as the operating component officer would rely upon the experience and expertise of OCS to design develop a satisfactory and responsive system.

To accomplish its mission, CHIVE Task Force management established a T/O of approximately 91 personnel. OCR was committed to supply 54, OCS-21, and 16 from contractors.

(Part 2)

The mechanics of staffing was further complicated by the need to create, and obtain approval of, a new organizational entity to house the OCR contingent. After that was accomplished position descriptions had to be written and approved; vacancy notices had to be circulated; interviews had to be scheduled; and finally, personnel could be identified.

All of this awaited management's approval to begin Phase III.

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D. Phase III

of Phase II,

As indicated in the [foregoing] discussion, almost all of the
tasks planned for Phase III had begun before management approval
for Phase III had been received. In fact, a portion of the File
Conversion task was completed in September 1965 with a preliminary
report to the effect that Intellofax holdings were unlikely candidates
for conversion to the CHIVE format.

[One task that could not be accomplished prior to official
sanction of Phase III was staffing. In order to staff, one had to
interview, which had to follow the circulation of vacancy notices,
which depended on an approved T/O, which depended on an organizational
structure with position descriptions approved by OCR management and
"wage and salary".] Much staff work could be done in advance, of
course, such as identifying the types of people needed and preparation
of a list of candidates. However, management approval was mandatory
in order to officially start the process and so the fact that recruiting
for the OCR portion of the task force was able to begin in November
of 1965 must be considered a major accomplishment.

The decision on the part of directorate management to deny the OCR
request for additional slots to staff the development of the CHIVE
system meant that OCR had to go through the agonizing process of
taking slots away from its _production_ components. [The approved manning
level for the CHIVE Task Force was set at approximately 91 of which

OCR was committed to supply 54 (OCS - 21 and the remainder from contractors). Since this was another in a series of manpower cut-backs in the production units in OCR, it was not welcome.

It was also clear that some of the CHIVE concepts and recommendations were unattractive to personnel in OCR. Managers at various working levels were thus asked to surrender positions *and people* to a development effort they did not understand, and whose product they did not feel they needed. As a consequence, the Phase III effort, which was to be a detailed design and development activity, had some significant political hurdles to surmount beyond those of a strictly technical nature.

[Briefly] the CHIVE Task Force was charged to produce during Phase III those tools and procedures necessary for a unit -- called the China Operations Group -- to handle all-source receipts on Communist China and respond to queries and production requests, regarding Communist China, levied on them by other CIA components. The China Operations Group (COG) was to be the first substantive component of an OCR organized along geographic lines. The process was viewed as incremental starting with COG. The next component would be a Far East Division with COG as a branch. After that, the other geographic divisions would be established in fairly rapid order as experience dictated.

The most difficult problem for the CHIVE Task Force during Phase III was the production of the computer program system. Some of the technical difficulties experienced in this area have been referred to previously. However, the management problems attendant to large program system development

were also severe. An established fact in the ADP world is the perennial
scarcity of qualified and experienced programmers and design analysts.
This scarcity is more pronounced in federal agencies than in industry
because of pay scale and other inequities. Moreover, programmers with
experience in designing and writing programs for information storage and
retrieval applications are a rare commodity in any environment. The
CHIVE programming group was therefore[in] a very difficult position. OCR
had no experienced programmers to contribute. Some trainees were
acquired from OCR, but they were unable to help design or specify pro-
grams. OCS had some experienced people, but the demands for program-
ming support within the agency precluded detailing senior programmers to
CHIVE. IBM had, or could acquire, programmers, but once more, the
desire on the part of CHIVE management to maintain design control dic-
tated a strong participation by staff employees. This left recruiting in the
"market place" as a means of getting programmers. A most unattractive
prospect. Recruiting actually started in Phase II and even with this ad-
vantage, Phase III began with only two staff employees in the programming
unit -- the chief and one analyst/programmer. In June 1967, over a year
after recruiting had begun, the contingent of staff employees in the pro-
gramming unit had grown to 11 -- 4 trainees, 6 programmers or program-
mer/analysts, and the unit chief. The trainees, in a practical sense, were
often more of a handicap than a help since their need for on-the-job train-
ing diluted the efforts of the more experienced and productive personnel.

This unit never achieved its assigned T/O manning level.

The last major blow to the programming effort occurred a short time before the task force was disbanded. [(It should be noted, however, that this event was not the cause of or even a major contribution *to OCR's decision to abolish the project)] The result of this disruption was a further slipping of the expected completion date of the program system and the account of this event is included here to indicate one of the disadvantages of the task force concept. As background for understanding the circumstances of this event, it should be recalled that The programming group [_as noted earlier_] was made up of people from OCR, OCS, and IBM. One major area of development and detailed design was assigned to an IBM employee who directed the activities of a section consisting largely of other IBM employees and trainees. As detailed program specifications were completed and coding began, it became clear to the OCS managers of the group that this unit had produced a design which was unresponsive to the total system requirement. After considerable study and consultation it developed that in order to meet system specifications this area -- one of the largest -- would have to be redesigned. All previous work would have to be scrapped. At the same time, it was decided that the services of approximately two thirds of the IBM contingent of programmers and analysts would no longer be required.√

The second most troublesome problem facing the task force was the language barrier. This barrier existed between those responsible for ADP system design and everybody else. The people on the task force who encountered the most difficulty were the senior analysts from OCR who were responsible for interpreting requirements for the ADP system designers. [These people were of the "traditional library" world and](though OCR

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was one of the largest and earliest users of punched card equipment⨾/

[the transition to digital computers was traumatic. The situation

could hardly have been worse since this group of OCR analysts was

responsible for interpreting requirements for the ADP system

designers.] The OCR people were experienced and skilled in

establishing indexing procedures and languages or selection criteria

for systems where the search is instituted by a knowledgeable human.

However, they had difficulty in addressing the levels of specificity,

completeness, and unambiguity which are mandatory if the search

and storage mechanism is a computer program system. The ADP systems people,
steeped in precision, were unable to bridge the communication gap
A further level of confusion resulted from statements to the

effect that the program system was to be a "powerful, flexible,

generalized, and open-ended mechanism capable of handling present

and future data storage and retrieval requirement." How such a

statement is interpreted depends, of course, on the sophistication

and training of the listener. For example, "a serious accident" to

a police officer may mean a collision of several vehicles and extensive

bodily injury; to a high school student driving his first car, it may

mean a damaged fender. Thus the OCR analyst came to expect the CHIVE

system would be a considerable improvement over the one that was

currently in use in OCR; the ADP people felt that the CHIVE system

would be very successful if it were able, initially, to do as well as

the current system and in addition have growth potential. This

difference of interpretation plagued the project throughout its life.

the need to understand third generation digital computer
technology and a large, complex, computer program
system demanded great feats of communication and
comprehension, ~~which has to shortcomings is~~

One can imagine the political repercussions attendant to a realiza-
tion on the part of policy makers and top management that millions
of dollars were being spent to develop a system whose basic design
goal was to do as good a job with a computer based system as was
currently being done by humans with punched cards and dossiers.
Arguments, to the effect that the current system had reached its
peak in efficiency and reliability and that further progress
depended on adopting new techniques, were apt to sound specious or
revolutionary.

The area of difficulty which ranked third in the hierarchy of
headaches was the training problem. As noted previously, the CHIVE
Task Force was charged to produce the tools and procedures required
to make the China Operations Group a production unit. Subsumed under
the phrase "tools and procedures" was the training necessary to
acquire: area knowledge, subject matter expertise, familiarity with
ADP processes, file definition capability, indexing competence,
understanding of selection problems in a new environment, and so on.
Much of this training could only come from osmosis since formal
training programs in some of these technical areas did not exist.

Thanks to the considerable experience and capability of a
few members of the OCR contingent, it was possible to develop
training programs for indexers. A course consisting of on-the-job
and classroom training was designed for the information analysts
to give them area knowledge, document flow familiarity and so on.
However, the course did not address the new techniques and language
which the analyst must understand in order to use the computer

program system. Early in Phase III, the programming group chief had been asked to provide a series of seminars/lectures in order to enlighten the uninitiated on file management concepts and particularly on what the CHIVE file structure would be. This was not successful and was abandoned after it became clear that the communication problem successfully inhibited the learning process. Most of the OCR analysts attended ADP Orientation courses. These courses usually lasted five days or less and did not add much to the ADP sophistication or knowledgeability of the attendees.

On the other side of the house, i.e., the programming group, there was no effort to indoctrinate its members in the language or concepts of library science. This was to be expected in light of the severe demands of the program production schedule. If the program developers had to choose between designing programs and explaining the implications of the design, it was natural for them to select the former.

This rather bleak situation was relieved to a certain extent by one element of the project which marched to a different drummer, i.e., had a different schedule and a separate set of requirements. This small enterprise came to be known as SKAN and during its life was roundly reviled, staunchly supported, or greatly admired depending on the vantage point of the observer. The history of SKAN is somewhat checkered and will be reviewed briefly.

In mid 1965, a conversation between CHIVE analysts and OCR management started the SKAN design effort. The first requirement was to produce a KWIC (Keyword in Context) listing of all collateral

documents. All documents were to be indexed by title and area; documents of special significance would be subject indexed as well. The anticipated use of such a listing would be to answer questions on non-priority areas.

As often happens, requirements change. The new requirement was to produce a KWIC listing of current collateral receipts on Communist China which would be published periodically and disseminated to production and research analysts working on China problems. The burden of knowing how the periodical was to be read thus shifted from the OCR information analyst to the production or research analyst. This apparently minor change in requirements may very well have drastically diminished the usefulness of the SKAN product since production analysts don't mind reading documents but they wish to have the proper documents presented for their inspection with as little personal effort as possible. Dissemination of SKAN meant that they would have to read the listing to determine if they had missed any important documents in current receipts.

Other design changes were made as the analysts studied the problem. For instance, all documents selected were to be subject indexed - thus reducing, to a certain extent, the scope of collateral material included in the publication. Keyword in context was judged to be difficult to read so keyword out of context was chosen as the format.

the scope of the work and the availability of IBM programmers who

were too junior to contribute much to the system design of the

large program system, led to [a recommendation that] SKAN [be] being developed

for the IBM 360/30. Thus SKAN became the bridge between computer

programmers and some of the OCR analysts.

In its relatively short life, SKAN chalked up some impressive

firsts. It was the first production program generated by CHIVE

Task Force programmers. In fact, it may have been the first production

program on an IBM 360/30 within the Agency. It was the first, and

only, for some time, production use of the CDC-915 (an optical character

reader system) in the Agency. This was a requirement for SKAN which

did not effect the value of the product. Though initial data input

for SKAN was on punched cards, it was decided that as soon as

feasible, index records to the SKAN program should be input via the

optical character reader. The purpose was to provide the designers

and developers of the CHIVE system with data on the use of this new

input device. The CHIVE Phase II Report had recommended the use of

optical character reading for input transcription, but actual

experience by Task Force personnel was very desirable. Therefore,

when the CDC-915 Page Reader and associated program modifications were

available, input was transferred to the Page Reader. This gave the

CHIVE Task Force experience in both techniques on the same system,

so comparisons and judgements could be made with some objectivity.

In addition to the virtues cited above, [it] experience on the SKAN project also assisted in a

number of other areas: forms design for an optical character reader,

development of indexing codes, training of indexers, shakedown of

the CDC-915, training of transcription typists, training of programmers

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on the 8092 computer which was part of the CDC-915 system, and the

production of programs for that computer. Finally, SKAN gave the

programming group some insight into the problems associated with

IBM's new line of hardware and software. However, [the tremendous]
a major

value of SKAN was not as an experimental device or even as a sop to

CHIVE inquisitors, but rather as a mechaism to assist the education

and orientation process. It was unfortunate that only about 15 people

on the task force were actively involved with SKAN and so could

benefit from the experience.

There was [one other] area within CHIVE that required programming
another

services over and above those necessary to build the major system.

This area was called Dictionary Building and in the CHIVE development

schedule, dictionaries of geographic locations and installations (factories,

research facilities, airfields, etc.) were of critical importance

since they were needed to train the COG indexers and analysts.

At the time work began on building these dictionaries, no all-

source dictionary existed on Chinese locations or installations.

There were several dictionaries, all containing different data or

similar data in different formats, in the Agency and the Community.

It was, therefore, necessary to pull these dictionaries together and

eliminate redundancies and contradictions in order to produce a CHIVE

dictionary.

Since some of these dictionaries were available on magnetic tape,

it was felt that the computer could be used to combine the dictionaries,

do some rough editing, and provide those listings which experienced

analysts would require to do the final detailed editing.
The Formatted File System mentioned in Phase II and which was
used in the Indexing Experiment looked like a good prospect to
manipulate these dictionary files. An analyst/programmer trainee
team was assigned to this area task. The reasons for choosing a
trainee were: no experienced programmer was available, and apparently
little or no programming was necessary -- it was simply a matter
of manipulating FFS.

The difficulties encountered on this task caused schedule slippages
which amounted to about 9 months. Fortunately the schedule had a
certain amount of slack. Also other slippages masked the problems
encountered on the dictionary task. A catalog of the software
problems, machine problems, and file [acquisition] definition problems would
be rather lengthy. Suffice to say that the three or four people
involved in this task did build the files and learned a great
deal in the process.

Fourth in the list of critical problems which faced the task force
was the fact that it was a fairly expensive and long range developmental endeavor. The difficulties
[whih beset the Task Force] are best characterized as [managerial. These
difficulties were of two major types:] communication and intrusion. intrusion and confusion.

The confusion came about in a fairly straightforward way.
It is best explained by elaborating on some of the idiosyncracies
of developmental projects.

There are three major phases to acquiring a new system: design/

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The communication difficulties within the task force ~~and~~ have already been discussed.

~~There was an almost~~ The communications problems, between the Task Force and OCR ~~management~~ (and DD/I), ~~OCR~~ management were almost as severe. There was little appreciation for, or understanding of, a number of concepts being explored ~~within~~ the Task Force. Bad enough that the biggest headache involved programmers, computers etc. which had never ~~had~~ been an area of keen interest in the Intelligence Directorate, the Task Force also proposed

CHIVE.

such things as management information systems, automation of source formatted data, and, of course, ~~extensive~~ use of analytic resources in a service ~~component~~.

~~Management changes were~~
New faces appeared in several key ~~many~~ management positions at the DD/I ~~and~~ level as well ~~as its~~ in OCR and the Task Force. As the deadline ~~for~~ the implementation of COG came closer, the management dialogues ~~were between~~ on CHIVE and its future featured new participants. ~~A number of~~ Some of these participants strove to grasp the

technical details of ~~the~~ fruits of a rather lengthy design and development effort. This was fairly unsuccessful — as one ~~I~~ might suspect. ~~Following~~

The extensive use of indexers and information analysts — a requisite of the depth indexing doctrine — was not attractive to DD/I management which, being ~~was~~ asked to harbor its manpower resources, ~~and~~ tended to apply them to ~~the~~ ~~temper~~ ~~I~~ intelligence production. The long ~~term~~ range gains vouchsafed by CHIVE proponents contrasted with the realities

of a here-and-now manpower squeeze

Having waited a long time for a
powerful mechanism to ~~managent~~ complex
files, ~~a number of~~ many decision-makers
were being captivated by ~~the~~ lure ^offered in^ coupling
shallow indexing (or no indexing at all) ~~and~~
big, fast computers. The former solved
the manpower problem i.e. the shallow indexing
~~the~~, ^meant^ fewer indexers ~~and~~ simple software. The
latter was being touted as "just around
the corner" by manufacturers who could
demonstrate that, for almost the same
money ~~a component two~~ currently being

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spending on EAM equipment, they could provide several times the computing capability. The considerable experience which the Task Force could bring to bear in evaluating such claims was not exploited.

Intrusion took the form of requests for cost studies, justification of schedules, briefings, and the like. Much of this intrusion was a direct result of DD/I management's ~~lack of~~ concern for the efficacy of the CHIVE concept in their plans for the directorate.

theme here is rd crucial, but if you keep it, suggest still emphasis to new people joining in with team, rather team members dropping off the end (this, I think, was our continuity problem).

sales, development/engineering, installation/testing/production. If the system is acquired over a fairly long time period, the designers/salesmen are usually not around during the next phase, i.e., development/engineering. Similarly, system developers tend not to be around for the production period though they might be available for the installation/test part of this phase. This metamorphosis is quite reasonable. Designers are an expensive, scarce commodity and cannot be squandered on a project once that phase is completed. Similarly, developers are scarce and expensive and must be moved to another project once their phase is completed. If there is little continuity insofar as people are concerned, the glue which keeps this development process from coming apart must be found elsewhere. And it is found in two words: requirements and specifications. The requirements for the system must be well-defined, complete, thoroughly understood, and capable of being translated into firm specifications. Upper management must play a major role in the requirements/specifications iteration in order that there be no surprises or recriminations downstream. The analogy which makes this point very well can be found in the dissatisfaction of someone who has engaged an architect/builder team to construct a house. If the owner of this new house complains of a deficiency, it is natural to ask if that item was a requirement. The answer comes back in many forms but usually can be put in one of three

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categories: no -- it was not a requirement, yes -- it was a require-
ment but there was a breakdown in communication, or yes -- it was a
requirement and the architect and/or builder is culpable.

CHIVE suffered from a lack of specific requirements.
Lacking an appreciation of its critical role in establishing
requirements, management approved the development of the CHIVE system
primarily because it trusted the integrity and expertise of the
designers/salesmen. Unable to obtain a complete set of requirements,
the designers went forward with a design which was based on their
understanding of the needs, attitudes, policies, future plans, and
general milieu of the requesting office. (All of which, obviously,
were subject to change without notice). The requirements/specifica-
tions iteration thus took place with very little contribution by
upper management.

As soon as the designers/salesmen had completed their jobs
(end of CHIVE Phase II), the development team started to come on
board. These people began, or should have begun, asking searching
questions about the lack of specifications. (As noted in the
Phase II discussion, a system cannot be built or tested without
specifications). The designers/salesmen were unable to obtain
answers to some questions. Thus, the developers set their own
specifications. The analogy of the dissatisfied homeowner is pertinent.

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If the architect/builder team were to ask the customer for his requirements regarding the dimensions of a living room and the customer responded with: "adequate", the customer has thus renounced his responsibility and must live with whatever the architect/builder team considers adequate.

Once Phase III was nicely underway, the designers/salesmen phased out and OCR management -- the system operator -- was left with the developers/engineers. Three things impacted on the operator at this point. First, the team he trusted was no longer running the show and although the designers vouched for the developers, "things were not the same." Second, the developers were a different breed, with a different language and different capabilities than the designers. As a result, the carefully nurtured communication channels and devices which had been established by the designers and the operator were seriously disturbed. Third, the cost of the system took a sharp turn upward. Suddenly there were ninety people instead of nine, equipment was being ordered, space became a problem,

manpower allocation was torturous, and priorities for clerical and other support services had to be reassigned in recognition of the demands of the task force.

The natural result of these three perturbations was confusion. Confusion gave rise to intrusion. Upper management, not being quite sure of what was going on and under some pressure to justify rising costs and (later) schedule slippages, requested briefings, early delivery, cost effectiveness studies, system comparisons, and so on. In addition, the designers/salesmen had done a good job of making the system attractive to other offices, other directorates, and other members of the intelligence community. This interest resulted in more briefings and reports. The inevitable result of these examinations was the levying of new requirements or the alteration of old requirements.

The task force management did a good job of insulating the working level from these intrusions. However, it was inevitable that a large number of the senior people on the task force would become aware of what questions were being asked and the implication of some of the demands. The effect on morale can be appreciated.

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Beginning in the summer of 1966 the excursions into the CHIVE Task Force for briefings, technical assistance, information, and writing ability became more and more frequent. One requester in OCR management wanted a compacted schedule for the completion of the tasks necessary to prepare the China Operations Group for operational responsibility. An in-depth study of OCR - its functions, products, responsibilities, and particularly the development effort embodied in CHIVE - was

initiated by the DD/I. Briefings took a considerable amount of time

and CTF managers were also called upon to write a good deal. Indexing

schemes which were less powerful   than the CHIVE approach were

considered and CTF analysts were asked to respond. :

During FY67 COINS was underway and the CHIVE Task Force was

expected to support this effort. In the same period [   ] began its STATINTL

STATINTL   development of the [   ] - later to have two names since

the file had to be divided.   OCR management called upon CHIVE for

assistance and the special assistant to the D/CTF became the senior

EDP analyst on this effort. Later the CTF supported this activity

with other manpower contributions.

OCR Management recognized the reservoir of talent residing in

the CHIVE Task Force in many ways. The preliminary work done by

CTF personnel on a management system for COG encouraged OCR management

to request these people to design a management system for all of OCR.

The newly formed Information Processing Staff under OPPB has issued

a call for all offices and directorates to prepare Five-Year ADP Plans -

in effect ten years since the report had to cover the preceding years

of ADP use as well as provide a five year plan for future ADP

utilization. Members of CTF were tasked to coordinate and contribute

to the OCR contribution as well as coordinate all office contributions

for the DD/I's report..

Later, a team of analysts was directed by OCR to develop forms,

gather data, conduct interviews - all to determine how OCR's

services were used by Agency personnel, particularly within the

Intelligence Directorate. CTF analysts were called upon to work on this

effort.

As more and more of the CHIVE tasks were completed and the
China Operations Group began staffing and planning, the unavailability
of the computer program system (CAPRI) became a growing concern.
Though coding on some parts of CAPRI had begun during the early
weeks of the fall of 1966, other system components were still being
specified. So it became quite clear that the target date of July 67
for initial COG operations using CAPRI was in grave danger of slipping.

This caused CTF personnel to consider alternative ways of
testing some of the CHIVE system capabilities. A study was launched
to determine what subsystems could be checked and by what means in
the absence of a fully tested CAPRI. This resulted in the identification
of some available equipment which could provide a rudimentary storage
and retrieval capability. The proposal was approved in October 1966
and it was planned that the equipment would see use in February 1967.
This never came to pass.

The depth of indexing, which was basic to the CHIVE design came
under the scrutiny of CTF personnel. This resulted in a proposal
for a "fall-back" system which called for a different division of
work for the indexer-analyst team and less indexing depth. Late in
the spring of 1967 as CTF personnel were shifted to COG and training
began, it was decided that an analyst-indexer team in COG would test
the "fall-back" system.

Another activity which would impact on CHIVE later but which
at the outset did not appear to warrant much attention by CTF
personnel was the growing viability of the OCR computing facility.
Early in FY67, OCR had launched a study to assess the feasibility

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The question of centralization ~~of its computer~~
~~center of the time~~ vs. decentralization of computational
support to various functional areas had been
a bone of contention for some time. Though OCS
provided a service of common concern, a number
of other ADP components existed for reasons
of geography, compartmentations and so on. OCR had
recommended years before that its extensive
card holdings and associated functions be computerized.

of substituting an IBM 360/30 for its extensive EAM holdings. The

study was staffed with IBM and OCR personnel - CTF was not asked to

participate. This study resulted in a recommendation to the DD/I

that the computer be acquired. And it was - in late November 1966.

Soon after the system was installed, OCR management approached the

CHIVE Task Force to obtain programmers to support the conversion of

EAM files and processes to EDP programs. Needless to say, the

CAPRI developers were loath to slip their schedule any further by

releasing programmers. Eventually two OCR trainee programmers in

the Task Force were detailed to the Machine Division in OCR. This

had an effect on activities such as the dictionary tasks and the

Soviet Elite File effort.

During this same period the OCR computer was operating well but

was not yet saturated with work. Consequently, the CAPRI programmers

were able to get code check time on this computer. This helped

considerably since the code check *and production* burden on the OCS computers was

severe.

As a result of dedicated effort on the part of the programming

group, it appeared likely, in the spring of 1967, that if not all,

at least some CAPRI capabilities would be ready by July of 1967.

Then the group managers discovered the design problem discussed

earlier and the schedule for CAPRI slipped to a degree that OCR *and* DD/I

management considered unacceptable.

This coincided with the DD/I directive that OCR should reorganize

along geographic lines [- much earlier than CHIVE had planned]; it

happened at a time that OCR was beginning to have confidence in its

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computer system; it occurred at about the time that OCR had provided

a software contractor with the necessary guidance to provide an

information storage and retrieval capability on the OCR computer;

and it crystallized a decision that the depth indexing of the CHIVE

system was too expensive for an office that had just suffered another

reduction in force. The sum total of these forces had a predictable

result: in July of 1967, OCR reorganized and the CHIVE Task Force

was disbanded.

A list of major events during Phase III is as follows:

1.	Oct 1965	All members of the CHIVE Task Force with the exception of the Associate Director and the programming group were colocated in 2G24. An all hands (CHIVE Task Force) meeting was held in the auditorium to discuss project objectives, career potential, organization and the like.
2.	Nov 1965	The process of interviewing candidates for the OCR contingent of the Task Force began.
3.	Dec 1965	The final report on conversion of Intelligence Reference Systems Index Records was disseminated.
4.	Jan 1966	A working paper entitled Document Delivery System Organization and Space Recommendation was forwarded to OCR management. This completed the Task Force contribution to the upgrading of OCR's document recording and distribution capability.
5.	Feb 1966	The chief of the OCR component of the task force (Development Staff) left the Agency and was replaced by a senior OCS analyst who transferred his career designation back to OCR.
6.	May 1966	The Director/CHIVE Task Force left to become DD/OCS. The associate director of the Task Force (who was also chief of the OCR contingent) became D/CTF. The Task Force was reorganized to reflect the new assignment of responsibilities caused by this change as well as the resignation from the agency (effective in June) of the Chief/COG.

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7. May 1966   The CDC 915 Page Reader System was delivered to OCS space in Headquarters building.

8. June 1966   The Security Procedures task personnel completed their major assignment, i.e., production of papers on physical security, personnel security, Top Secret controls, and the security augmentation problem.

9. Sept 1966   The Subject Keyword Announcement (SKAN) went into regular production and was disseminated weekly to about 25 analysts.

10. Sept 1966   The CDC 915 Page Reader System passed acceptance tests.   **STATINTL**

11. Sept 1966

12. Oct 1966   The indexers version of the ChiCom Location Dictionary was published.

13. Oct 1966   A chief for the China Operations Group was selected. He had served as an intelligence production officer in OCI.

14. Nov 1966   A detailed study of the function, activities, and projects in OCR by a representative of the DD/I was completed. The CHIVE Task Force contributed substantially to the study and the final report.

15. Nov 1966   An IBM 360/30 computing system was installed in OCR space in Headquarters

16. Dec 1966   A report, entitled "SKAN Customer Survey Program" which summarized interviews with the recipients of the SKAN publication was issued. It recommended that the publishing of SKAN continue.

17. Dec 1966   A document, describing the input transactions for documents in COG, was published.

18. Jan 1967   A paper describing the proposed organizational structure for the COG was discussed and accepted.

19. Jan 1967   Copies of the ChiCom Location Dictionary were distributed within the Agency.

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20.	Jan 1967	A document describing processing procedures and standards [_____] was published.

21. Jan 1967 The second edition of the last two volumes of the "Catalog of Document Series Reporting on Communist China" were published, thus completing this aspect of the Customer Requirements task.

22. Feb 1967 CHIVE Task Force managers were informed of the DD/I directive to D/OCR to reduce T/O level.

23. March 1967 The data input procedure for the SKAN process was changed from punched cards, to page reader forms input to the CDC 915 Page Reader System. Production of SKAN was uninterrupted.

24. May 1967 The chief of the Index and Retrieval Design Group, a senior OCS analyst, transferred to OCR and left the Task Force to work full time on the Area Reorganization Planning Group (ARPG) established by D/OCR. The ARPG was tasked to develop the plan, procedures, etc., for reorganizing OCR along geographic lines. The D/CTF was named as a member of the ARPG but was not relieved of his current responsibilities The OCR instruction of 8 May announcing the ARPG concluded with the statement that, "The operational testing of Project CHIVE in the China Operations Group (COG) will continue as planned."

25. May 1967 Regular distribution of collateral and special intelligence materials to COG was initiated in order to train COG indexers and analysts.

26. May 1967 The Source Formatted Data task, which addressed the feasibility of taking data which came to the Agency in a formatted form and putting it into the computer with a minimum of manual processing, had progressed to the point of testing typewriters and other transcription devices.

27. May 1967 OCR entered into a contract arrangement with a software firm to modify an OCS program system to run on OCR's 360/30. The function of the modified program would be to provide information storage and retrieval.

28. May 1967

The unacceptability of the design of a major element of the CAPRI system resulted in a schedule slippage of at least 6 months.

29. June 1967

The modification of the Intelligence Subject Code, termed the Subject Indexing Code (SIC), complete with decode tables, and a punched card deck to provide listings, was completed.

30. June 1967

The Management Information Task Team issued a paper setting forth a design concept for a management information system for the OCR CHIVE system.

31. July 1967

The IBM complement on the CHIVE Task Force was reduced to five people, approximately one third its normal strength. Jurisdiction over the CAPRI effort was transferred to OCS. All OCS careerists were transferred to positions in OCS.

32. July 1967

An OCR Instruction dated 7 July 1967 described the reorganization of OCR which resulted from ARPG deliberations. All elements of the OCR contingent on the CHIVE Task Force were disbanded except for COG which would continue testing as the Experimental Facility under the direction of the newly formed Planning Management Staff. The SKAN Indexing Unit was placed under the direction of Chief/OCR Experimental Facility.

Epilogue

A project of the magnitude of CHIVE does not cease abruptly

Finals 1967 — 1968

T   12 Sep 67

HISTORY OF PROJECT CHIVE

A. Before Phase I

The rationale for the CHIVE Project had its roots in numerous

investigations, conducted by in-house as well as contractor person-

nel since approximately 1959, all of which generally agreed both

as to the increasing seriousness of the information retrieval

problem within the Agency and the advisability of introducing new

hardware and techniques reflecting the present state-of-the-art of

the information-handling technology. In a report issued in 1958

under the auspices of the Central Reference Advisory Group (CRAG),

it was stated that in one DD/I Office (OCR):

> "The volume of incoming information exceeds processing
> capabilities based on current manual or electrical accounting
> machine (EAM) techniques;
>
> The proportion of receipts which can be fully processed is
> declining;
>
> Service from existing facilities is becoming slower as the
> size of the several indexes increases;
>
> Quality of service in terms of listing, subject correlation,
> up-dating, and display is declining or not offered because
> of the limitations of current staff and equipment."

These findings with respect to OCR were complemented by indicated

applications for computers in ORR, OSI, and other DD/I Offices.

The CHIVE Project, therefore, was not envisioned as a study of the applicability of computers and other devices to the document handling problems of the Agency, but rather as a system-oriented attempt to reduce the spectrum of DD/I problems to manageable proportions in order to exact from available equipment and techniques their known design potential in the solution of these critical problems. Because the magnitude and complexity of the task equaled or exceeded any previous design effort in the storage and retrieval area, the search for problem solutions was characterized by an attitude of relative caution.

The major events[1] preceding the initiation of Phase I of the CHIVE project are as follows:

1. Feb 1959   CIA Management Staff recommended
                      to the DCI that a study be undertaken
                      of the computer requirements of the
                      DD/I area.

2. Jul - Aug 1959   DD/I components conducted a prefeasi-
                      bility study, concluding that there are
                      areas demanding improvement for which
                      ADP offers significant potential sup-
                      port, and recommending "that an EDPM
                      feasibility study for the DD/I area be
                      undertaken."

3. Jan - Mar 1961   IBM and SDC, under the sponsorship of
                      the DD/I Automation Staff, conducted
                      6-week surveys of the DD/I, finding that
                      the DD/I was seriously behind other
                      Community members in the information
                      handling art and recommending that a large-
                      scale effort be launched immediately with
                      heavy contractor participation.

1] See: Project CHIVE Preliminary System Design Report, Infor-
    mation Processing, 1 Dec 1963, CHIVE 1-63, pp 6, 7.

4.	April 1961	The DD/I Automation Staff issued a paper recommending that the DD/I establish a Computer Center, implement production applications on the computer in specific problem areas, and undertake a major system study of the overall document and information retrieval problem.
5.	July 1961	The CIA Automatic Data Processing Staff (ADPS) was created in the DD/S and the DD/I Automation and CIA Management Staffs abolished.
6.	October 1961	Formal management review was completed and approval received for an EDP development program for the DD/I based upon the Automation Staff's proposals of April 1961.
7.	January 1962	ADPS published a document describing its planned development program for the DD/I in greater detail. The principal phases of the system design effort in the document and information retrieval field (Task III of the proposed program) were anticipated to include: (a) contractor orientation, (b) planning the study, (c) fact-finding, (d) system design, (e) testing of techniques and models, (f) implementation of selected sub-systems, and (g) documentation.

It should be emphasized here that the name CHIVE was originally applied to a three-part program aimed at moving the Intelligence Directorate into the computer environment.

(1) The first element of the program was to establish a computer center as such, and to acquire the personnel, hardware, and expertise necessary to operate this center.

(2) The second element was to implement specific ADP applications which had been identified by study groups over a period of a year or so. (Note: The intent of these first two elements was to get started on specific, well-defined applications as soon as ADP support was available.)

(3) The third element was to examine the general information/document retrieval problem in the Agency. The goal of this third element was later altered to address the information/document retrieval problems of the Office of Central Reference (now known as the Central Reference Service) which performed a service of common concern to the entire Agency and, in many respects, to the entire intelligence community. Thus modified, the third element of the three-part program became Project CHIVE.

It was apparent to CHIVE architects that though the Agency had senior and capable people who were intimately aware of the capabilities and shortcomings of its present information storage and retrieval system, it was woefully poor in ADP talent -- both system analysts and programmers. This was evidenced by the willingness of the Agency to ask contractors such as IBM and SDC, acknowledged as proficient in system design and development, to study the Agency's problem.

The decision to acquire IBM's services was rooted to a certain extent in their pre-eminence in the field of hardware service. It was felt also that the contractor personnel assigned to CHIVE should understand IBM hardware. Finally, IBM's establishment of semi-autonomous divisions such as Federal Systems Division, separated the hardware salesman from the application system specialists and in theory provided the latter with a certain objectivity.

B. Phase I

The first phase of a multi-phase system development was a requirements determination phase and fact-finding survey. Approximately 150 interviews of user offices--primarily research or production offices--in CIA were conducted during this period. These were aimed at determining what information problems existed, how the user regarded the present central reference system, what source material were of primary concern, and in general what requirements would be levied on system developers. One of the principal issues was the existence of a central reference facility. Alternative methods of providing analyst support existed and had points in their favor. Separate and distinct special project files was one alternative. Another was to provide assistance to the research and production analysts in maintaining their own personal collections--the so-called "shoebox files".

The analysts conducting and evaluating the interviews had to be as objective as possible since the identification of which kind of system users preferred was a major influence in establishing requirements. It turned out that the majority preferred the central reference facility as an adjunct to the other alternatives. With this basic concept determined, more detailed requirements could be set forth.

The major events[2] of Phase I were:

| May - Jul 1962 | Clearance and orientation of contractor personnel, as well as recruitment and preliminary training of initial "hard core" element of ADP Staff, was completed. |

2] ibid pp 7, 8

Aug 1962	The scope and methodology of the fact-finding effort was developed and management approval obtained for a detailed survey of all DD/I offices.
Sep 1962 - April 1963	Joint ADPS/IBM teams interviewed approximately 150 components organizations of the DD/I.
Oct 1962[3]	A memo from Ray Cline (DD/I) to Intelligence Assistant Directors reviewed the three CHIVE task areas and endorsed the project efforts.
June 1963	Major findings and recommended design parameters resulting from the Phase I DD/I system study were presented to selected DD/I managers in oral and written form.
Aug 1963	The DD/I formed a CHIVE Evaluation Group (CEG), composed of representatives from various Agency offices, to review the CHIVE Phase I report.
Aug 1963	The Automatic Data Processing Staff was transferred from the DD/S to the newly established DD/S&T and reorganized as the Office of Computer Services
Sep - Oct 1963	The CHIVE Evaluation Group completed its analysis of the CHIVE Phase I findings, recommending (inter alia) that the Project continue into a second phase with guidance and support from the DD/I and careful testing of system feasibility prior to implementation

The system design or Phase I report (see footnote 1) produced after Phase I ended, was devoted for the most part to a discussion of System Objectives and System Functions Preliminary Specifications.

3] This event does not appear in document referenced - footnote 1.

The two principal system characteristics were:

    (1)   Document-based

    (2)   Centralized control

The first of these had been denied as a necessary attribute by some staff employees with considerable experience in the Agency but who were ambitious to push forward to a system of data control, data manipulation, and data or information retrieval. In effect, the proponents of this concept suggested that once the data and information content of a document had been identified, extracted, indexed, coded, and stored in an EDP system, the document was of only marginal importance. Reliance would be placed on the EDP system to retrieve, by subject, category, named object, and so on, the gist of the documents indexed.

Those who supported the need to build into the system a capability for document as well as fact retrieval were simply responding to the evidence supplied by a central reference service. This experience showed that analysts very often wished to read the parent document from which data had been extracted. That was viewed as a requirement which would continue for some time to come. Hence the system would be document-based.

Discussion of the second characteristic addressed the multiplicity of repositories which constituted the present system and went on to propose that "...the specialized register concept be abandoned and the personnel of the central system be organized along geographic lines to the extent possible." Clearly, reorganization of OCR was basic and fundamental to the Chive design.

Under the discussion of System Service in the same report
the CHIVE designers listed the following as basic to the de-
sign: "(1) that the CHIVE system and the analyst files will
complement one another, and (2) that the system's primary cus-
tomer is the Agency desk analyst." Thus, the continuation of the
"shoe-box file" was acknowledged together with an emphasis on user,
not operator, satisfaction.

The chapter on System Scope in the Phase I report had five
sections which pretty well established system boundaries. Listed
below are the section headings with short excerpts from each:

"1. Document Boundaries

...The data base for the CHIVE System must, therefore, en-
compass all documents in the use by the analytic offices
which the system must serve.

2. Indexing Boundaries

...In addition to retrieving material based on multiple
criteria, (i.e., personalities, organizations/installations,
geographic location, subject) a capability for large-scale
manipulation of the data base index must be provided to
permit information to be correlated for the analyst. This,
indeed, is one of the primary justifications for acquiring
a computer which, unlike simpler machine tools, has both
the speed and logic capabilities to perform this function
effectively.

3. Security Boundaries

If the proposed system is to serve in fact as the central
repository of positive intelligence information for all
components of the Agency, it must process and store any
information of continuing intelligence value--whatever its
security classification.

4. Dissemination

The Agency must have the capability to disseminate incoming
documents automatically on the basis of the document content

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and analyst's statements of interests.

5. The Initial System

The basic objective of the initial system is to establish
a small-scale mechanical structure of the eventual system in a
limited, controlled environment. This system will be designed
with the performance specifications of the full system in
mind for application to a limited area. One of the basic
premises of the initial system, however, will be that expan-
sion in terms of added sources and increased performance will
not require substantial redesign of programs, methods of
operation or equipment configuration."

Clearly, these concepts were controversial to many. Note

in 2. the reference to the justification for a computer. In 3.

there was embodied the "all-source file" concept. In 4. automatic

dissemination was advocated (later abandoned in the design of a

first system). In 5. the bread-board approach was recommended.

Coupled with the proposed area reorganization this indicated that

the initial system would be tested in one geographic area component.

As the culmination of the Phase I data gathering and conceptual

design effort, this document is noteworthy.

The year 1963 was filled with accomplishments and changes

for CHIVE. Two computers (1401/1410) for the DD/I were delivered

in January 1963 and in subsequent monthly reports were referred to

as the CHIVE Computer System. CHIVE programmers (trainees) worked

under the tutelage of IBM personnel. Computer support prior to

the installations of the 1401/1410 Systems was provided by DDP.

It is noteworthy that during the first half of 1963, Project CHIVE

had the three-pronged emphasis noted earlier. In fact, a seven-

page report written for the DD/I at the end of FY-63 devoted six

pages to accomplishments in: establishing a computer center and implementing applications. The seventh page announced the end of Phase I of the Document/Information Retrieval Systems Design-- Task III - and commented that this task was the most difficult of all CHIVE tasks.

The CHIVE Evaluation Group (CEG) was also constituted in July/August, and the August status report indicated that further progress on Task III - System Design had virtually stopped. In September those CHIVE personnel assigned to Task III were busy preparing briefings and reports for the CEG.

The CEG report of 7 October 1963 recommended the continuation of project CHIVE--with reservations. The group recommended that management responsibility for CHIVE should be vested in the Intelligebce Directorate, and that OCR should continue to improve its present system. The subject of hardware received attention as well. The CEG acknowledged that program testing would be done in a centralized facility such as OCS, but noted that when computer utilization by the operational system reached one shift or more, the computer system should be part of the central reference system of the Intelligence Directorate. Moreover, CHIVE was charged to consider the suitability, for the Intelligence Directorate, of extant systems when assessing equipment requirements.

Another area of concern to the CEG was that of testing. The group seemed to express misgivings about OCR plunging into a new system without testing of pilot projects. Recommendations were made to the effect that formulation of such pilot projects

be approved by the DD/I. (As the indexing experiment of Phase II showed, such activities are expensive, time consuming, and in the final analysis, suggest, but do not prove, an operational approach).

C.   Phase II

Management review by the CHIVE Evaluation Group

of the Phase I report, the reorganization which

resulted in OCS, and the physical relocation of people and equip-

ment were major factors in causing Phase II to have a slow start.

A progress report of approximately 28 pages written 18 September

1963 was a distillation of design concepts garnered in Phase I

and polished in the first months of Phase II.

CHIVE 1-63, 1 Dec 1963, presented the same schedule shown in

the June 1963 Project Chive Quarterly Report. This schedule called

for the completion of Phase I (of Task III) in June 1963. The same

schedule shows Phase II as running from July 1963 through June 1964

(actually the Phase II report was not completed until the Spring of

1965). Phase III in the old schedule was to run from July 1964

through April 1965--in retrospect, an incredibly optimistic plan.

In fact, Phase II was completed at about the same time that Phase

III had been planned to end.

The establishment of OCS and the designation of Task III as

Project CHIVE resulted in a much smaller team. (It should be noted

that Project CHIVE went from about 60 people to six and from three

tasks to one without a name change).

This new team was composed of analysts from several compo-

nents. Like many projects, CHIVE was an organizational anomaly.

IBM, OCR, and OCS contributed manpower to the effort. This was

advantageous in that it brought together the right mix of dis-

ciplines and experience. However, management guidance and

control also came from various sources. This was not as beneficial.

The OCS contingent was the fledgling Development Branch (later Division); the OCR contingent, designated the CHIVE Support Staff, consisted of senior analysts who for the most part had acquired their experience in the Library (Documents Division), Biographic Register and Special Register. The IBM group -- the largest of the three -- consisted of analysts and programmers.

In October 1963, project personnel had been assigned to major design areas. IBM had sole responsibility for all facets of design with the exception of Information Processing -- indexing procedures, indexing language, definition of files, document processing, file conversion, selection criteria and so on. These topics were addressed by a group of agency employees. It was recognized rather early that this was the bellwether of the design areas--decisions made here would have a marked influence on all other areas.

IBM had submitted a contract proposal in June of 1963. Discussions between agency designers led by [   ] and the   **STATINTL** IBM contingent on how to get the job done continued for some time. Clearly IBM felt that they could not proceed to work intelligently on their assigned design tasks without input from the Information Processing team. Since they felt they possessed some pertinent experience they wished to be represented on that team as well. The staff personnel were loath to surrender, even partially, design tasks in the one area they understood thoroughly and where they felt their contribution would be more valuable than any work done by an outsider. Sharing the burden was not particularly palatable to IBM since they preferred to work

on well-defined tasks which were their exclusive responsibility.
Also, they had a different design concept from that set forth
by the in-house people. This was to be expected but was not
precisely welcome.

Compromises were discussed which would permit IBM personnel
to maintain headway in their exclusive task areas but would also
let them assign personnel to the Information Processing Task. To
the extent possible, this had to be reflected in the contract. The
proper wording was not easy to find. As a consequence the IBM
contract was not signed until June 1964--one year after IBM had
written their proposal.

The August 1964 monthly report shows assignment of personnel
to major design areas. Of these, IBM had sole responsibility for
EDP System Design and Programming Support. Two contractor em-
ployees were responsible for the Document Delivery System. Design
of the Information Processing area and overall design responsibility
was assigned to staff personnel. Thus contract personnel did design
work without design responsibility for design of the total system.
This continued to be an awkward situation from their point of view
and it resulted in a fairly rapid turnover in IBM on-site managers
during Phase II.

A list of major events during Phase II is as follows:

1.	Sept 1963	First progress report of Phase II produced.
2.	Dec 1963	CHIVE 1-63 which was to be the design "bible" for the project was produced.

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3. April 1964   [   ] appointed as DD/I CHIVE Pro-
ject Officer. CHIVE Evaluation Conference
held at [   ] resulted in substantial change
to organization of system design efforts
as well as decisions in design areas where
alternatives had previously existed.

4. May/June 1964   First indexing experiment utilizing
                           computer programs, conducted by CHIVE
                           personnel.

5. June 1964 - June 65   During this period a large scale index-
                           ing experiment utilizing computer programs
                           for

storage and retrieval of index records was
planned, designed, staffed, conducted, and
analyzed.

6. August 1964   A functional flow diagram was produced show-
ing input/outputs and identifying program
elements to be written in support of the
OCR/CHIVE Indexing Experiment.

7. September 1964   A technical report entitled "A Comparative
Analysis of Document Delivery Systems for
Large and Active Files" was distributed,
thus signalling the completion of the major
design effort in this area.

8. November 1964   During the third week, indexing began on the
OCR/CHIVE Indexing Experiment. The team,
consisting of 26 people, had indexed 1500
documents by the end of the month.

9. December 1964   The major components of the computer pro-
gram system necessary to support the In-
dexing Experiment were operational and the
building of tape files containing index
data was begun.

10. January 1965   Indexing of the 5,130 documents for the
Indexing Experiment was completed and the
majority of the indexers returned to their
home components in OCR. Approximately
nine members of the team were retained to
assist in the query phase of the experiment.

11. March 1965   A preliminary study of input transcription
techniques submitted by SRI for the Phase II
report recommended the use of a page reader.
A study of available optical character recog-
nition systems was begun. A revision of the
Intelligence Subject Code (ISC) was begun as
a result of the indexing experiment. This
was a Phase III task started during Phase II.

12. April 1965   The Systems Analysis Staff was formed in OCR
and the CHIVE Support Staff was abolished.

13. May 1965   By the end of May, three of the seven volumes
of the CHIVE Phase II report had been printed
and distributed. A project was initiated
to produce a China Locations Dictionary by
merging extant dictionaries. This was another
task area intended for Phase III.

14. June 1965 — The query phase of the OCR/CHIVE Indexing Experiment was completed, signalling the end of the experiment and associated analysis. Another Phase III task was initiated. This one was concerned with the feasibility of converting large OCR files for CHIVE use in the operational phase.

15. July 1965 — All seven volumes of the Phase II report were disseminated. The CHIVE Project was reorganized as the CHIVE Task Force with ☐ of OCS as its director, reporting to the director of OCR. Management approval of the Phase II report and direction to proceed with Phase III had not been received at this time. The design effort, which culminated during Phase III in production of the SKAN (Subject Keyword Announcement) publication, began this month.

16. August 1965 — By the end of this month, most of the tasks planned for Phase III had been initiated and plans to recruit the personnel necessary for full staffing of the task force had been formulated.

17. September 1965 — A memo to D/OCS/DDS&T from the DD/I dated 16 September 1965 stated that with certain exceptions the Phase II report and recommendations had been approved, and that the D/OCR had been directed to divert resources to staff the CHIVE Task Force. Thus Phase III began.

This list of events is only an effort to capture highlights and is indicative of the problems and satisfactions of system design work.

One of the major design areas that was not highlighted in this list was the EDP System. A great deal of work was done by IBM contractors in this area. They studied core allocation problems, interface with S/360 Operating System problems, file definition problems, and so on. Many reports and recommendations were produced. Volume VII of the Phase II

report which covered the EDP System design was 389 pages long--
exceeded only by Volume V, 526 pages. Unfortunately the detail
of the design was based on other areas about which information
was incomplete and/or constantly changing. For example, IBM's
S/360 hardware/software dilemmas had not become public knowledge
at that time. Equally important, detailed requirements were not
obtainable from the customer, the DD/I analysts, nor from the
operator, OCR, whose personnel had incomplete understanding of
what was required in order that computer programs could be speci-
fied and written. Thus the task of specifying requirements fell
to the system designer/developer--a very risky business.

The result of this approach was that an EDP system was de-
signed which was generalized along almost any dimension that one
could choose--with at least one notable exception, the hardware
system. The designers were assured that the EDP program system
would be run on a large scale system, i.e., an IBM 360/50 or larger
since it was OCS's intention to go to that line of equipment. The
Phase II recommendations called for the EDP program system to run
initially on OCS hardware with a review of the OCS computer load
after two years to determine who should manage the computer ele-
ment of CHIVE. However, Mr. Cline's (DD/I) memo of 18 September
did not accept that recommendation and repeated the theme expressed
in the CHIVE Evaluation Group report, i.e., the Intelligence Direc-
torate should have its own computer. It was agreed that testing
would be done on OCS equipment so the program development could
proceed.

Very general information storage and retrieval systems are very complex and very difficult to build. However, the designers felt that the demands of fact/information retrieval/manipulation in an intelligence agency were sufficiently demanding to justify a very powerful system.

Another point of interest in Phase II was simply the historical problem of deciding when Phase II ended and Phase III began. The OCS/CHIVE Indexing Experiment spawned Phase III tasks while it was in progress. As soon as the indexing was completed and the indexer's critiques had been produced and absorbed, senior analysts on the Experiment team were anxious to translate findings into indexing tools and procedures. So the modification of the Intelligence Subject Code (ISC) was begun. Also, analysis and testing of the indexing position was initiated to determine what indexing aids were appropriate. It should be remembered that a basic CHIVE concept called for a division of labor between analyst and indexer; many OCR analysts did both. Thus the indexing position and its relation to the analyst was fair game for analysis, study, and test.

So Phase III had a running start before the DD/I memo was written in September. The staff personnel necessary for some tasks were not available, however, and could not be obtained before management approval to proceed with Phase III.

Another aspect of the Indexing Experiment that warrants attention was the programming support required. The IBM programmers took advantage of the Formatted File System (developed by IBM for Fleet Intelligence Center Europe) which could be run on the IBM 1410 in OCS and, a query program, AD003, previously written by OCS

programmers, was used to provide additional query capability. In addition, programs had to be written specifically for the Experiment to provide input processing and listing functions. This collection of programs provided the operational capability necessary to process index records and provide responses to queries, including KWIC (Keyword in Context) listings.

Over and above this system were the statistical routines which were produced by the programmers to assist the analysts in their interpretation of the experimental data. These routines provided statistics on header data, content data, document categories, and codes used by the indexers. It should be noted that either in a test or an operational situation, statistical analysis is a powerful tool in analyzing system strengths and weaknesses.

Finally computer programs were necessary to provide dictionaries and authority lists. The indexers required such listings to do their job. In addition, the people (analysts) answering queries needed such lists in order to obtain some idea of what kinds of data were held in the file. It was this last area of computer programming that stimulated the dictionary building efforts over the next two years.

The design concepts postulated in the Phase I report and given a firmer emphasis in CHIVE 1-63, went through considerable examination and testing during Phase II. It is interesting and significant to note that there was no substantial shift of design emphasis as a result of this exercise.

One area which received only cursory attention before it was exempted from further analysis was the dissemination area. Two very good reasons existed for excluding it from the initial CHIVE

system. First, the dissemination process had a good reputation with its customers and since it was readily isolatable from the main system, it seemed pointless to disturb it. Second, the contract work being performed for the Air Force at the Foreign Technology Division had as its first application the automation of dissemination. It was reasonable, therefore, to wait for the fruits of this labor.

Although the formidability of the security problems associated with an all-source EDP file were better understood by the end of Phase II, the project personnel viewed them as primarily technical in nature and capable of solution.

Study of the data selection problem during Phase II had started to address details with no drastic shift from the document types identified earlier. Clearly, the amount of material to be captured was a direct function of manpower available. The results of the Indexing Experiment gave added importance to the role of subject indexing without reducing the value of indexing named objects.

The political and inertial problems associated with a reorganization of OCR along geographic lines were recognized but postponed to a certain extent. The initial component, China Operations Group (COG), would operate in a test mode for some period of time before seizing production responsibility from those several components in OCR which handled China-related queries and reports.

The concept of a team of information analyst and indexer(s) had been tested to a degree during the indexing experiment but it was clear that the concept had to be tested in an operational environment before a decision could be made regarding its validity.

Such design concepts as single point service, improved docu-

ment delivery system, and direct input of preformatted index data were still viable at the end of Phase II. The conceptual design of the computer program system received little criticism and it was apparent that OCR, as the operating component, would rely upon the experience and expertise of OCS to develop a satisfactory and responsive system.

D.   Phase III

The CHIVE Task Force was charged to produce during
Phase III those tools and procedures necessary for a unit --
called the China Operations Group -- to handle all-source
receipts on Communist China and respond to queries and produc-
tion requests, regarding Communist China, levied on them by
other CIA components. The China Operations Group (COG) was to
be the first substantive component of an OCR organized along geo-
graphic lines. The process was viewed as incremental starting
with COG. The next component would be a Far East Division with
COG as a branch. After that, the other geographic divisions
would be established in fairly rapid order as experience dictated.

To accomplish its mission, CHIVE Task Force management
established a T/O of approximately 91 personnel. OCR was com-
mitted to supply 54, OCS-21, and 16 from contractors.

The decision on the part of Intelligence Directorate
management to deny the OCR request for additional slots to staff
the development of the CHIVE system meant that OCR had to go
through the agonizing process of taking slots away from its
production components. Since this was another in a series of
manpower cutbacks in the production units in OCR, it was not
welcome. It was also clear that some of the CHIVE concepts and
recommendations were unattractive to personnel in OCR. Managers
at various working levels were thus asked to surrender positions
and people to a development effort they did not understand, and
whose product they did not feel they needed. As a consequence,
the Phase III effort, which was to be a detailed design and
development activity, had some significant political hurdles to

surmount beyond those of a strictly technical nature.

The mechanics of staffing was further complicated by the need to create, and obtain approval of, a new organizational entity to house the OCR contingent. After that was accomplished position descriptions had to be written and approved; vacancy notices had to be circulated; interviews had to be scheduled; and finally, personnel could be identified. All of this awaited management's approval to begin Phase III. Much staff work could be done in advance, of course, such as identifying the types of people needed and preparation of a list of candidates. However, management approval was mandatory in order to officially start the process and so the fact that recruiting for the OCR portion of the task force was able to begin in November of 1965 must be considered a major accomplishment.

As indicated in the discussion of Phase II, almost all of the tasks planned for Phase III had begun before management approval for Phase III had been received. In fact, a portion of the File Conversion task was completed in September 1965 with a preliminary report to the effect that Intellofax holdings were unlikely candidates for conversion to the CHIVE format.

The most difficult problem for the CHIVE Task Force during Phase III was the production of the computer program system. Some of the technical difficulties experienced in this area have been referred to previously. However, the management problems attendant to large program system development were also severe. An established fact in the ADP world is the perennial scarcity of qualified and experienced programmers and design analysts. This

scarcity is more pronounced in federal agencies than in industry
because of pay scale and other inequities. Moreover, programmers
with experience in designing and writing programs for information
storage and retrieval applications are a rare commodity in any
environment. Staffing of the CHIVE programming group was there-
fore a very difficult task. OCR had no experienced programmers
to contribute. Some trainees were acquired from OCR, but they
were unable to help design or specify programs. OCS had some
experienced people, but the demands for programming support
within the agency precluded detailing senior programmers to
CHIVE. IBM had, or could acquire, programmers, but once more,
the desire on the part of CHIVE management to maintain design
control dictate a strong participation by staff employees. This
left recruiting in the "market place" as a means of getting pro-
grammers. A most unattractive prospect.

Recruiting actually started in Phase II and even with this
advantage, Phase III began with only two staff employees in the
programming unit -- the chief and one analyst/programmer. In
June 1967, over a year after recruiting had begun, the contin-
gent of staff employees in the programming unit had grown to 11 --
4 trainees, 6 programmers or programmer/analysts, and the unit
chief. The trainees, in a practical sense, were often more of
a handicap than a help since their need for on-the-job training
diluted the efforts of the more experienced and productive personnel.
This unit never achieved its assigned T/O manning level.

The last major blow to the programming effort occurred a
short time before the task force was disbanded. As background for
understanding the circumstances of this event, it should be recalled

that the programming group was made up of people from OCR, OCS, and IBM. One major area of development and detailed design was assigned to an IBM employee who directed the activities of a section consisting largely of other IBM employees and trainees. As detailed program specifications were completed and coding began, it became clear to the OCS managers of thr group that this unit had produced a design which was unresponsive to the total system requirement. After considerable study and consultation it developed that in order to meet system specifications this area -- one of the largest -- would have to be resdesigned. All previous work would have to be scrapped. At the same time, it was decided that the services of approximately two thirds of the IBM contingent of programmers and analysts would no longer be required. The result of this disruption was a further slipping of the expected completion date of the program system and the account of this event is included here to indicate one of the disadvantages of the task force concept.

The second most troublesome problem facing the task force was the language barrier. This barrier existed between those responsible for ADP system design and everybody else. The people on the task force who encountered the most difficulty were the senior analysts from OCR who were responsible for interpreting requirements for the ADP system designers. Though OCR was one of the largest and earliest users of punched card equipment the need to understand third generation digital computer technology and a large, complex, computer program system demanded great feats of communication and comprehension. The OCR people were experienced

and skilled in establishing indexing procedures and languages or selection criteria for systems where the search is instituted by a knowledgeable human. However, they had difficulty in addressing the levels of specificity, completeness, and unambiguity which are mandatory if the search and storage mechanism is a computer program system. The ADP systems people, steeped in precision, were unable to bridge the communication gap.

A further level of confusion resulted from statements to the effect that the program system was to be a "powerful, flexible, generalized open-ended mechanism--capable of handling present and future data storage and retrieval requirement." How such a statement is interpreted depends, of course, on the sophistication and training of the listener. For example, "a serious accident" to a police officer may mean a collision of several vehicles and extensive bodily injury; to a high school student driving his first car, it may mean a damaged fender. Thus the OCR analyst came to expect the CHIVE system would be a considerable improvement over the one that was currently in use in OCR; the ADP people felt that the CHIVE system would be very successful if it were able, initially, to do as well as the current system and in addition have growth potential. This difference of interpretation plagued the project throughout its life. One can imagine the political repercussions attendant to a realization on the part of policy makers and top management that millions of dollars were being spent to develop a system whose basic design goal was to do as good a job with a computer based system as was currently being done by humans with punched cards and dossiers. Arguments to the effect that the current system had reached its peak in efficiency and reliability and that fur-

their progress progress depended on adopting new techniques, were apt to sound specious or revolutionary.

The area of difficulty which ranked third in the hierarchy of headaches was the training problem. As noted previously, the CHIVE Task Force was charged to produce the tools and precedures required to make the China Operations Group a production unit. Subsumed under the phrase "tools and procedures" was the training necessary to acquire: area knowledge, subject matter expertise, familiarity with ADP processes, file definition capability, indexing competence, understanding of selection problems in a new environment, and so on. Much of this training could only come from osmosis since formal training programs in some of these technical areas did not exist.

Thanks to the considerable experience and capability of a few members of the OCR contingent, it was possible to develop training programs for indexers. A course consisting of on-the-job and classroom training was designed for the information analysts to give them area knowledge, document flow familiarity and so on. However, the course did not address the new techniques and language which the analyst must understand in order to use the computer program system. Early in Phase III, the programming group chief had been asked to provide a series of seminars/lectures in order to enlighten the uninitiated on file management concepts and particularly on what the CHIVE file structure would be. This was not successful and was abandoned after it became clear that the communication problem successfully inhibited the learning process. Most of the OCR analysts attended ADP Orientation courses. These courses usually lasted five days or less and did not add much to the ADP sophistication or knowledgeability of the attendees.

On the other side of the house, i.e., the programming group, there was no effort to indoctrinate its members in the language or concepts of library science. This was to be expected in light of the severe demands of the program production schedule. If the program developers had to choose between designing programs and explaining the implications of the design, it was natural for them to select the former.

This rather bleak situation was relieved to a certain extent by one element of the project which marched to a different drummer, i.e., had a different schedule and a separate set of requirements. This small enterprise came to be known as SKAN and during its life was roundly reviled, staunchly supported, or greatly admired depending on the vantage point of the observer. The history of SKAN is somewhat checkered and will be reviewed briefly.

In mid 1965, a conversation between CHIVE analysts and OCR management started the SKAN design effort. The first requirement was to produce a KWIC (Keyword in Context) listing of all collateral documents. All documents were to be indexed by title and area; documents of special significance would be subject indexed as well. The anticipated use of such a listing would be to answer questions on non-priority areas.

As often happens, requirements change. The new requirement was to produce a KWIC listing of current collateral receipts on Communist China which would be published periodically and disseminated to production and research analysts working on China problems. The burden of knowing how the periodical was to be read thus shifted from the OCR information analyst to the pro-

duction or research analyst. This apparently minor change in requirements may very well have drastically diminished the usefulness of the SKAN product since production analysts don't mind reading documents but they wish to have the proper documents presented for their inspection with as little personal effort as possible. Dissemination of SKAN meant that they would have to read the listing to determine if they had missed any important documents in current receipts.

Other design changes were made as the analysts studied the problem. For instance, all documents selected were to be subject indexed - thus reducing, to a certain extent, the scope of collateral material included in the publication. Keyword in context was judged to be difficult to read so keyword out of context was chosen as the format.

The scope of the work and the availability of IBM programmers who were too junior to contribute much to the system design of the large program system, led to SKAN being developed for the IBM 360/30. Thus SKAN became the bridge between computer programmers and some of the OCR analysts.

In its relatively short life, SKAN chalked up some impressive firsts. It was the first production program generated by CHIVE Task Force programmers. In fact, it may have been the first production program on an IBM 360/30 within the Agency. It was the first, and only, for some time, production use of the CDC-915 (an optical character reader system) in the Agency.

This was a requirement for SKAN which did not effect the value of the product. Though initial data input for SKAN was on punched cards, it was decided that as soon as feasible, index records to

the SKAN program should be input via the optical character reader. The purpose was to provide the designers and developers of the CHIVE system with data on the use of this new input device. The CHIVE Phase II Report had recommended the use of optical character reading for input transcription, but actual experience by Task Force personnel was very desirable. Therefore, when the CDC-915 Page Reader and associated program modifications were available, input was transferred to the Page Reader. This gave the CHIVE Task Force experience in both techniques on the same system, so comparisons and judgements could be made with some objectivity.

In addition to the virtues cited above, experience on the SKAN project also assisted in a number of other areas: forms design for an optical character reader, development of indexing codes, training of indexers, shakedown of the CDC-915, training of transcription typists, training of programmers on the 8092 computer which was part of the CDC-915 system, and the production of programs for that computer. Finally, SKAN gave the programming group some insight into the problems associated with IBM's new line of hardware and software. However, a major value of SKAN was not as an experimental device or even as a sop to CHIVE inquisitors, but rather as a mechanism to assist the education and orientation process. It was unfortunate that only about 15 people on the task force were actively involved with SKAN and so could benefit from the experience.

There was another area within CHIVE that required programming services over and above those necessary to building the major system. This area was called Dictionary Building and in the CHIVE develop-

ment schedule, dictionaries of geographic locations and installa-
tions (factories, research facilities, airfields, etc.) were of
critical importance since they were needed to train the COG in-
dexers and analysts.

At the time work began on building these dictionaries, no
all-source dictionary existed on Chinese locations or installa-
tions. There were several dictionaries, all containing different
data or similar data in different formats, in the Agency and the
Community. It was, therefore, necessary to pull these dictionaries
together and eliminate redundancies and contradictions in order
to produce a CHIVE dictionary.

Since some of these dictionaries were available on magnetic
tape, it was felt that the computer could be used to combine the
dictionaries, do some rough editing, and provide those listings
which experienced

analysts would require to do the final detailed editing. The Formatted File System mentioned in Phase II and which was used in the Indexing Experiment looked like a good prospect to manipulate these dictionary files. An analyst/programmer trainee team was assigned to this area task. The reasons for choosing a trainee were: no experienced programmer was available, and apparently little or no programming was necessary -- it was simply a matter of manipulating FFS.

The difficulties encountered on this task caused schedule slippages which amounted to about 9 months. Fortunately the schedule had a certain amount of slack. Also other slippages masked the problems encountered on the dictionary task. A catalog of the software problems, machine problems, and file definition problems would be rather lengthy. Suffice to say that the three or four people involved in this task did build the files and learned a great deal in the process.

Fourth in the list of critical problems which faced the task force was the fact that it was a fairly expensive and long range developmental endeavor. The difficulties are best characterized as communication and intrusion.

The communication difficulties within the task force have already been discussed. The communications problems between the Task Force and OCR (and DD/I) management were almost as severe. There was little appreciation for, or understanding of, a number of concepts being explored in CHIVE. Bad enough that the biggest headache involved programmers, computers, etc. which had never been an area of keen interest in the Intelligence Directorate, the Task Force also proposed such things as management information

systems, automation of source formatted data, and, of course,
extensive use of analytic resources in a service component.

New faces appeared in several key management positions
at the DD/I level as well in OCR and the Task Force. As the
deadline for the implementation of COG came closer, the manage-
ment dialogues on CHIVE and its future featured new participants.
Some of these participants strove to grasp the technical details
of the fruits of a rather lengthy design and development effort.
This was fairly unsuccessful -- as one might suspect.

The extensive use of indexers and information analysts -- a
requisite of the depth indexing doctrine -- was not attractive to
DD/I management which, being asked to harbor its manpower resources,
tended to apply them to intelligence production. The long range
gains vouchsafed by CHIVE proponents contrasted with the realities
of a here-and-now manpower squeeze.

Having waited a long time for a powerful mechanism to manage
complex files, many decision-makers were being captivated by the
lure offered in coupling shallow indexing (or no indexing at all)
and big, fast computers. The former solved the manpower problem
i.e. the shallow indexing meant fewer indexers and simple soft-
ware. The latter was being touted as "just around the corner"
by manufacturers who could demonstrate that, for almost the same
money currently being spent on EAM equipment, they could provide
several times the computing capability. The considerable experience
which the Task Force could bring to bear in evaluating such claims
was not exploited.

Intrusion took the form of requests for cost studies, justi-
fication of schedules, briefings and the like. Much of this intru-

sion was a direct result of DD/I management's concern for the

efficacy of the CHIVE concept in their plans for the directorate.

The task force management did a good job of insulating the working level from these intrusions. However, it was inevitable that a large number of the senior people on the task force would become aware of what questions were being asked and the implication of some of the demands. The effect on morale can be appreciated .

Beginning in the summer of 1966 the excursions into the CHIVE Task Force for briefings, technical assistance, information, and writing ability became more and more frequent. One requester in OCR management wanted a compacted schedule for the completion of the tasks necessary to prepare the China Operations Group for operational responsibility. An in-depth study of OCR - its functions, products, responsibilities, and particularly the development effort embodied in CHIVE - was initiated by the DD/I. Briefings took a considerable amount of time and CTF managers were also called upon to write a good deal. Indexing schemes which were less powerful than the CHIVE approach were considered and CTF analysts were asked to respond.

During FY67 COINS was underway and the CHIVE Task Force was STATINTL expected to support this effort. In the same period[   ]

STATINTL its development of the[   ] - later to have two names since the file had to be divided. OCR management called upon CHIVE for assistance and the special assitant to the D/CTF became the senior EDP analyst on this effort. Later the CTF supported this activity with other manpower contributions.

OCR Management recognized the reservoir of talent residing in the CHIVE Task Force in many ways. The preliminary work done by CTF personnel on a management system for COG encouraged OCR

management to request these people to design a management system for all of OCR. The newly formed Information Processing Staff under OPPB had issued a call for all offices and directorates to prepare Five-Year ADP Plans - in effect ten years since the report had to cover the preceding years of ADP use as well as provide a five year plan for future ADP utilization. Members of CTF were tasked to coordinate, and contribute to, the OCR contribution as well as coordinate all office contributions for the DD/I's report.

Later, a team of analysts was directed by OCR to develop forms, gather data, conduct interviews - all to determine how OCR's services were used by Agency personnel, particularly within the Intelligence Directorate. CTF analysts were called upon to work on this effort.

As more and more of the CHIVE tasks were completed and the China Operations Group began staffing and planning, the unavailability of the computer program system (CAPRI) became a growing concern. Though coding on some parts of CAPRI had begun during the early weeks of the fall of 1966, other system components were still being specified. So it became quite clear that the target date of July 67 for initial COG operations using CAPRI was in grave danger of slipping.

This caused CTF personnel to consider alternative ways of testing some of the CHIVE system capabilities. A study was launched to determine what subsystems could be checked and by what means in the absence of a fully tested CAPRI. This resulted in the identification of some available equipment which could provide a rudimentary storage and retrieval capability. The proposal was approved in October 1966 and it was planned that the equipment would see use in February 1967. This never came to pass.

The depth of indexing and separation of the indexing and analytic functions were examined by CTF personnel. This resulted in a proposal for a "fall-back" system which called for a different division of work for the indexer-analyst team and less indexing depth. Late in the spring of 1967 as CTF personnel were shifted to COG and training began, it was decided that an analyst-indexer team in COG would test the "fall-back" system.

Another activity which would impact on CHIVE later but which at the outset did not appear to warrant much attention by CTF personnel was the growing viability of the OCR computing facility. The question of centralization vs decentralization of computational support to various functional areas had been a bone of contention

for some time. Though OCS provided a service of common concern, a number of other ADP components existed for reasons of geography, compartmentation and so on. OCR had recommended years before that its extensive card holdings and associated functions be computerized.

Early in FY67, OCR had launched a study to assess the feasibility of substituting an IBM 360/30 for its extensive EAM holdings. The study was staffed with IBM and OCR personnel - CTF was not asked to participate. This study resulted in a recommendation to the DD/I that the computer be acquired. And it was - in late November 1966. Soon after the system was installed, OCR management approached the CHIVE Task Force to obtain programmers to support the conversion of EAM files and processes to EDP programs. Needless to say, the CAPRI developers were loath to slip their schedule any further by releasing programmers. Eventually two OCR trainee programmers in the Task Force were detailed to the Machine Division in OCR. This had an effect on activities such as the dictionary tasks and the Soviet Elite File effort.

During this same period the OCR computer was operating well but was not yet saturated with work. Consequently, the CAPRI programmers were able to get code check time on this computer. This helped considerably since the code check and production burden on the OCS computers was severe.

As a result of dedicated effort on the part of the programming group, it appeared likely, in the spring of 1967, that if not all, at least some CAPRI capabilities would be ready by July of 1967. Then the group managers discovered the design problem discussed earlier and the schedule for CAPRI slipped to a degree that OCR and DD/I management considered unacceptable.

This coincided with the DD/I directive that OCR reorganize along geographic lines; it happened at a time that OCR was beginning to have confidence in its computer system; it occurred at about the time that OCR had provided a software contractor with the necessary guidance to provide an information storage and retrieval capability on the OCR computer; and it crystallized a decision that the depth indexing of the CHIVE system was too expensive for an office that had just suffered another reduction in force. The sum total of these forces had a predictable result: in July of 1967, OCR reorganized and the CHIVE Task Force was disbanded.

A list of major events during Phase III is as follows:

1. Oct 1965

All members of the Chive Task Force with the exception of the Associate Director and the programming group were colocated in 2G24. An all hands (CHIVE Task Force) meeting was held in the auditorium to discuss project objectives, career potential, organization and the like.

2. Nov 1965

The process of interviewing candidates for the OCR contingent of the Task Force began.

3. Dec 1965

The final report on conversion of Intelligence Reference Systems Index Records was disseminated.

4. Jan 1966

A working paper entitled Document Delivery System Organization and Space Recommendation was forward to OCR management. This completed the Task Force contribution to the upgrading of OCR's document recording and distribution capability.

5. Feb 1966

The Chief of the OCR component of the task force (Development Staff) left the Agency and was replaced by a senior OCS analyst who transferred his career designation back to OCR.

6. May 1966

The Director/CHIVE Task Force left to become DD/OCS. The associate director of the Task Force (who was also chief of the OCR contingent) became D/CTF. The Task Force was reorganized to reflect the new assignment of responsibilities caused by this change as well as the resignation from the agency (effective in June) of the Chief/COG.

7. May 1966   The CDC 915 Page Reader System was delivered to OCS space in Headquarters building.

8. June 1966   The Security Procedures task personnel completed their major assignment, i.e., production of papers on physical security, personnel security, Top Secret controls, and the security augmentation problem.

9. Sept 1966   The Subject Keyword Announcement (SKAN) went into regular production and was disseminated weekly to about 25 analysts.

10. Sept 1966   The CDC 915 Page Reader System passed acceptance tests.

11. Sept 1966   The task team assigned to study the requirements of the China Operations Group for dossiers on ChiCom personalities completed the assignment. The working paper describing task team findings and recommendations was accepted.

12. Oct 1966   The indexers version of the ChiCom Location Dictionary was published.

13. Oct. 1966   A chief for the China Operations Group was selected. He had served as an intelligence production officer in OCI.

14. Nov 1966   A detailed study of the function, activities, and projects in OCR by a representative of the DD/I was completed. The CHIVE Task Force contributed substantially to the study and the final report.

15. Nov 1966   An IBM 360/30 computing system was installed in OCR space in Headquarters.

16. Dec 1966   A report, entitled "SKAN Customer Survey Program" which summarized interviews with the recipients of the SKAN publication was issued. It recommended that the publishing of SKAN continue.

17. Dec 1966   A document, describing the input transactions for documents in COG, was published.

18. Jan 1967   A paper describing the proposed organizational structure for the COG was discussed and accepted.

19. Jan 1967   Copies of the ChiCom Location Dictionary were distributed within the Agency.

20. Jan 1967   A document describing processing procedures
                and standards for building [   ]   25X6
                was published.

21. Jan 1967   The second edition of the last two volumes
                of the "Catalog of Document Series Reporting
                on Communist China" was published, thus com-
                pleting this aspect of the Customer Require-
                ments task.

22. Feb 1967   CHIVE Task Force managers were informed of
                the DD/I directive to D/OCR to reduce T/O
                level.

23. March 1967 The data input procedure for the SKAN pro-
                cess was changed from punched cards, to page
                reader forms input to the CDC 915 Page Reader
                System. Production of SKAN was uninterrupted.

24. May 1967   The chief of the Index and Retrieval Design
                Group, a senior OCS analyst, transferred to
                OCR and left the Task Force to work full
                time on the Area Reorganization Planning
                Group (ARPG) established by D/OCR. The ARPG
                was tasked to develop the plan, procedures,
                etc., for reorganizing OCR along geographic
                lines. The D/CTF was named as a member of
                the ARPG but was not relieved of his current
                responsibilities. The OCR instruction of 8
                May announcing the ARPG concluded with the
                statement that, "The operational testing of
                Project CHIVE in the China Operations Group
                (COG) will continue as planned."

25. May 1967   Regular distribution of collateral and
                special intelligence materials to COG was
                initiated in order to train COG indexers
                and analysts.

26. May 1967   The Source Formatted Data task, which addressed
                the feasibility of taking data which came to
                the Agency in a formatted form and putting it in-
                to the computer with a minimum of manual processing,
                had progressed to the point of testing typewriters
                and other transcription devices.

27. May 1967   OCR entered into a contract arrangement with a
                software firm to modify an OCS program system
                to run on OCR's 360/30. The function of the
                modified program would be to provide informa-
                tion storage and retrieval.

28. May 1967

The unacceptability of the design of a major element of the CAPRI system resulted in a schedule slippage of at least 6 months.

29. June 1967

The modification of the Intelligence Subject Code, termed the Subject Indexing Code (SIC), complete with decode tables and a punched card deck to provide listings, was completed.

30. June 1967

The Management Information Task Team issued a paper setting forth a design concept for a management information system for the OCR CHIVE system.

31. July 1967

The IBM complement on the CHIVE Task Force was reduced to five people, approximately one third its normal strength. Jurisdiction over the CAPRI effort was transferred to OCS. All OCS careerists were transferred to positions in OCS.

32. July 1967

An OCR Instruction dated 7 July 1967 described the reorganization of OCR which resulted from ARPG deliberations. All elements of the OCR contingent on the CHIVE Task Force were disbanded except for COG which would continue testing as the Experimental Facility under the direction of the newly formed Planning Management Staff. The SKAN Indexing Unit was placed under the direction of Chief/Experimental Facility.

JD :

General Comment on face of pg.

little blunt. Specific attacks — perhaps

too defensive. Sorry to take so long.

Studies... idea not bad but considerable

shortening would be required

Pg 2, Event 3 : Have always objected to comment that DDI "was seriously behind...". Others moved sooner into computer acquisitions, etc but without dramatic impact on their QS&R capability. The inertia, or myopia, was at the senior management level, not within OCR (or OCS) itself.

Pg 4 (3) : Should note that OSS was then in the DD/I; DD/S&T didn't exist. Sometime, after its establishment, and particularly during DDI deliberations re CRC cuts, the original inclusion of S&T interests was obscured. Also, altho the ADPS group in Phase I concentrated on DD/I interests, the ultimate beneficiary of the improved central service was the Agency as a whole (including DDP) — a point made continuously by OCR (CRS).

Pg 11, CEG Report: Not sure of tone intended in the sentence beginning "Clearly the CEG was not concerned...". Although OCS did not accept the fact as final, the DDI position was clearly and continuously stated to be that of acquisition of hardware to operate the new system.

Pg 15, the August 1964 monthly report: "Sounds contradictory to say "IBM has sole responsibility for CDP System design..." and that "... contractor personnel did design work without system design responsibility." And the "Thus..." seems to be a non-sequitur. How many on-site managers were there during Phase II? Is this the issue that led to the final break — should it be elaborated upon?

Pg 16, Item 12 : Significance of the SAS establishment and ESS abolition will not be

endorsed (albeit for different parochial reasons). Also, it is not accurate to say that "the CHIVE program system was circumvented".

Pg 19, bottom: Not sure how to change it, but tone here seems offensive or, at least, patronizing. Need it?

Pg 27, top: Suggest elaboration in the parenthetical comment since the DDI cut affected so deeply a major portion of the design concept and implementation. Also, do not consider it accurate to say that OCR decided "to abolish" the project

Pg 27, bottom: Do not consider it true that the "traditional librarian" label applied to the bulk of the people nor that transition to digital computers was "traumatic". Rapport and good communication, for fascinatingly frustrating reasons, were missing. And comment, on pg 28, that "the situation could hardly have been worse ..." is unfair to both sides. The task force was, among other things, caught in the political squeeze involving all the Agency ADP components and this squeeze was felt at all levels.

Pg 36, top: "CHIVE suffered from a lack of specific requirements." Is that really true? Who is "management"? What level of detail or specificity was missing? Why?

Pg 42: Re CHIVE disbanding - note extent to which design concepts

were implemented

Chuck

Doug:

I've given a copy of this
to Al for his history. You've looked
at it thru' Phase II. I would
appreciate your looking at Phase III
+ letting me know what problems need
fixing.

The paper needs an epilogue
— what happened in FY 68!

I don't have the data yet but
I can get it + write the last
chapter. In that connection I'm
thinking I might redo the
whole thing so it could get
into Studies In Intelligence.
What thinkst thou?

— Neil